

NATIONAL ECONOMIC AND SOCIAL COUNCIL

Urbanisation and Regional Development in Ireland

No. 45

NATIONAL ECONOMIC AND SOCIAL COUNCIL CONSTITUTION AND TERMS OF REFERENCE

1. The main task of the National Economic and Social Council shall be to provide a forum for discussion of the principles relating to the efficient development of the national economy and the achievement of social justice, and to advise the Government, through the Minister for Economic Planning and Development, on their application. The Council shall have regard, *inter alia*, to:

- (i) the realisation of the highest possible levels of employment at adequate reward,
- (ii) the attainment of the highest sustainable rate of economic growth,
- (iii) the fair and equitable distribution of the income and wealth of the nation,
- (iv) reasonable price stability and long-term equilibrium in the balance of payments,
- (v) the balanced development of all regions in the country, and
- (vi) the social implications of economic growth, including the need to protect the environment.

2. The Council may consider such matters either on its own initiative or at the request of the Government.

3. Members of the Government shall be entitled to attend the Council's meetings. The Council may at any time present its views to the Government, on matters within its terms of reference. Any reports which the Council may produce shall be submitted to the Government and, together with any comments which the Government may then make thereon, shall be laid before each House of the Oireachtas and published.

4. The membership of the Council shall comprise a Chairman appointed by the Government in consultation with the interests represented on the Council,

Ten persons nominated by agricultural organisations,

Ten persons nominated by the Confederation of Irish Industry and the Irish Employers' Confederation,

Ten persons nominated by the Irish Congress of Trade Unions,

Ten other persons appointed by the Government, and

Seven persons representing Government Departments comprising one representative each from the Departments of Economic Planning and Development, Finance, Agriculture, Industry, Commerce and Energy, Labour, and Local Government and one person representing the Departments of Health and Social Welfare.

Any other Government Department shall have the right of audience at Council meetings if warranted by the Council's agenda, subject to the right of the Chairman to regulate the numbers attending.

5. The term of office of members shall be for three years renewable. Casual vacancies shall be filled by the Government or by the nominating body as appropriate. Members filling casual vacancies may hold office until the expiry of the other members' current term of office and their membership shall then be renewable on the same basis as that of other members.

6. The Council shall have its own Secretariat, subject to the approval of the Minister for Economic Planning and Development in regard to numbers, remuneration and conditions of service.

7. The Council shall regulate its own procedure.

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PART I

**THE COUNCIL'S COMMENTS ON
"URBANISATION AND REGIONAL DEVELOPMENT
IN IRELAND"**

I INTRODUCTION

- 1 The Council has already published a series of studies on regional policy. The first report in this series dealt with the existing regional policy and with the thinking which underlay it¹. Subsequent reports in the series recommended some institutional changes which would aid regional development, considered the possibility of encouraging the growth of service-type employment in the regions, and examined the income disparities between counties and regions.²
- 2 For the next stage of its work on regional policy, the Council decided to examine the relationship between urbanisation and regional development. Accordingly, Dr. P. N. O'Farrell, of The Department of Town Planning, University of Wales Institute of Science and Technology, was commissioned to report on the principles underlying this relationship, with particular reference to the formulation and implementation of regional policy and the development of a national urban strategy.
- 3 The study by Dr. O'Farrell is published in full in Part II of this report. Chapter 10 contains a summary of the main points discussed.
- 4 The main objectives of regional development should be to reduce the regional inequalities in living standards, job opportunities, unemployment and involuntary net migration, with particular reference to the imbalance between the Dublin area and the rest of the country, within the context of the national objectives of attaining full

¹NESC, Report No. 4, *Regional Policy in Ireland: A Review*, 1975.

²NESC, Report No. 22, *Institutional Arrangements for Regional Economic Development*, 1976; NESC, Report No. 28, *Service-type Employment and Regional Development*, 1977; NESC, Report No. 30, *Personal Incomes by County in 1973*, 1977.

employment and raising living standards. The extent of the existing inequalities in material standards—though these may overstate the inequalities in human welfare—has already been outlined.³

5 There is a close relationship between urban and regional policy issues. Important elements of any regional policy must be a policy towards the development of both urban and rural areas, a reliable set of population projections for these areas which would be used for planning purposes, a policy on the allocation of public investment, and a policy on the desired location of industrial and service-type employment in these areas.⁴

6 The relationship between urban and regional policy and, in particular, the concept of growth centres has been the subject of a number of studies and Government statements since the early 1960s. The selection and development of growth centres was recommended by the Committee on Industrial Organisation in 1962, by the Committee on Development Centres and Industrial Estates in 1964, and by the National Industrial Economic Council in its comments on that Committee's report⁵ in 1965, as well as in its Report on Industrial Adaptation and Development in 1968. The Buchanan Report⁶ concluded that the economic requirements of full employment necessitated the concentration of industry in a few large centres comparable with other major European centres. It therefore recommended a composite strategy, which envisaged a hierarchy of three national growth centres (Dublin, Cork and Limerick/Shannon), six regional centres⁷ and four local centres⁸. The National Industrial Economic Council, in 1969⁹ argued that, if Dublin was not to continue

³NESC Report No. 30, *Personal Incomes by County in 1973, 1977*.

⁴See NESC Report No. 28, *Service-type Employment and Regional Development, 1977*.

⁵NIEC Report No. 10, *Comments on Report of Committee on Development Centres and Industrial Estates, 1965*.

⁶*Regional Studies in Ireland, 1968*, Colin Buchanan and Partners in association with Economic Consultants Ltd.

⁷Waterford, Galway, Dundalk, Drogheda, Sligo, Athlone.

⁸Tralee, Letterkenny, Castlebar, and one for Counties Longford, Cavan and Monaghan, with Cavan as the centre suggested.

⁹NIEC Report No. 26, *Report on Physical Planning, 1969*.

to grow relative to the rest of the country, policy must aim specifically at developing other centres. It also emphasised the need initially to concentrate resources on Cork and Limerick/Shannon so as to achieve the greatest and quickest returns on investment in terms of total employment and production.

7 Government statements on regional policy, in 1965, 1969 and, most recently, in 1972, have also referred to these issues. In August 1965, the Government stated its acceptance of the concept of development centres as being an effective means of promoting the further expansion of economic activity. However, it considered that the dispersal of industrial activity throughout the country, where this was economically feasible, yielded important social advantages, and, therefore, that the location of industry in other centres should be encouraged through the administration of the industrial grants schemes. In May 1969, following publication of the Buchanan Report, the Government issued a statement accepting in principle that growth centres can be a valuable element in a regional programme aimed at achieving more favourable conditions for new and expanding industry and a wider dispersion of economic activity. Nevertheless, the Government reaffirmed in this statement that it would seek to ensure that new industrial and service employment opportunities would be created at local level to help absorb the supply of labour. As regards the future of Dublin, the Government statement considered it necessary to provide only for the natural population increase, for new enterprises for which an alternative location was not feasible, and for the expansion of existing enterprises. However, subject to these constraints it would be the policy that the further expansion of the city should not be actively promoted. In the most recent Government policy statement—Review of Regional Policy, May 1972—the decision to adopt an overall regional policy for approximately the next twenty years was announced. Elements of concentration and dispersion were envisaged, together with the continuation of special measures for the development of the Gaeltacht. The statement indicated the expected growth in population in the nine main urban centres,¹⁰ and in the urban areas outside these centres, in the period to 1991. There is an urgent

¹⁰Dublin, Cork Area, Limerick-Shannon-Ennis Area, Waterford, Galway, Dundalk, Drogheda, Sligo, Athlone.

need to reassess this Government statement, and the population figures therein, in view of the population changes which have occurred since then. Such a reassessment will not be easy because of the lack of quantitative data, particularly as regards the location of the more significant population changes. This reassessment will presumably be an integral part of the review of the 1972 Regional Policy Statement, which the Minister for Economic Planning and Development announced in the Dáil on 31 May 1978.

8 Clearly then, there has been, for at least the last twenty years, a widespread concern about the increased concentration of population and economic activity, particularly that in the service sector, and a recognition that the problem should be tackled through a more active support for other regional centres. Despite the attention which has been given to these matters in various independent studies and Government statements during these years, the Council has felt it necessary to address these issues once again in view of the absence of any effective action in recent years to influence the trend towards concentration of population in the East region.

9 In doing so, the Council is conscious of the fact that urbanisation and regional policies are concerned essentially with long-term policy choices, which makes the decisions on these choices particularly difficult. However, because these decisions will have profound implications for our future development, it is important that they should not continually be neglected.

10 The Council is fully aware that the immediate need is to reduce the unacceptably high level of national unemployment. The Government's stated intention of giving priority to reducing the level of unemployment has already been supported by the Council in Report No. 44, *Comments on Development for Full Employment*, 1978. Nonetheless, it is important that immediate problems, however pressing they may be, should not obscure the need for longer-term policies relating to the location of population and employment. In the short term, the channelling of investment to aim for a better long-term regional balance in economic activity may delay somewhat the attainment of the more immediate goal of full employment. The extent

of this delay can, of course, be minimised if not eliminated, by prudent planning. In the long-term, the Council feels that the likelihood of maintaining lower unemployment for a given level of demand may be enhanced by establishing a better regional balance. Indeed, it may be that full employment, once achieved, could not be sustained over a long period of time without a more even distribution of population and economic activity than is likely if present trends continue.

11 It should also be recognised that over-concentration of urban population is a problem with which, in varying degree, most other countries in Europe and elsewhere are faced. Unfortunately, no universally accepted solution to the problem has been found, but the Council notes the contrasting examples cited by Dr. O'Farrell, namely, France and West Germany, which have similar economic growth rates. The former, however, exhibits extreme concentration of its population in the capital, with no second-level cities in the 2—8 million population size group¹¹, while the latter has a number of regional capitals, but no primate city¹². Although it is unlikely that solutions which may be found in other countries would be directly applicable here, there is value in looking at their experiences. The Council hopes, therefore, to be in a position in the near future to carry out a comparative study of regional problems in the context of the European Community, which it is hoped will contribute to a better understanding of our own regional problems and so assist in the formulation of an effective regional policy.

II THE CHOICE OF STRATEGIES

12 In Dr. O'Farrell's study, the recent trends in population growth have been examined. Overall there has been a steady increase in the proportion of the national population living in urban areas. With

¹¹In 1975 the population of Paris, city and suburbs, was 8½ million, compared with 1 million in Lyons, the second largest town.

¹²In 1977 three towns (West Berlin, Hamburg and Munich) had populations of between 1 and 2 million, and six towns (Cologne, Essen, Frankfurt, Dortmund, Bremen and Hanover) populations of between ½ and 1 million. The population of the capital, Bonn, was 284,000.

increased industrialisation, and the decline in the importance of agriculture as a source of employment, this is to be expected. Within this overall trend, the proportion of the population living in the East region has been rising at a relatively faster rate. It has also been shown that growth of population in the East region has largely been due to the fact that the natural rate of increase there has been higher than anywhere else in the country. Consequently, even without any immigration to the region from other areas of the country, the concentration of the urban population in the East region will continue unless corrective measures are taken. This prospect of a continuous increase in the share of the national population living in the East region is of fundamental importance for urban and regional policy in Ireland.

13 Dr. O'Farrell has considered three alternative strategies in relation to the concentration of population in the East region:

Strategy A: the continuation of present trends with the result that a projected 38½% of the national population would be located in the East region by 1986.

Strategy B: the stabilisation of the population share of the East region at its 1975 level of 36½% through relocating 40,000 jobs¹³ with the consequent need to move a population of 70,000 away from the region by 1986.

Strategy C: aiming for an intermediate position where the East region's population share would be allowed to rise, but to only 37½% by 1986 through relocating 19,000¹⁴ new and existing service jobs, and the need to move a population of 33,000, to other regions.

¹³Including both new service and manufacturing jobs and existing service jobs. In calculating this figure of 40,000, Dr. O'Farrell has assumed a participation rate of 100%. On the basis of 1977 figures, for the country as a whole, of 1.1 million and 3.2 million for those gainfully occupied (aged 15-64) and total population (all ages) respectively, a participation rate of 34% is obtained. The order of magnitude of the jobs that would have to be created in the regions, associated with the relocation of 70,000 people, would be about 24,000. In practice therefore, the number of jobs to be relocated would be somewhere between 24,000 and 40,000.

¹⁴For the reasons outlined in footnote 13 above the actual number of jobs to be relocated under Strategy C would be between 11,000 and 19,000.

14 When considering the merits of alternative strategies, the fundamental question is whether it is desirable that the proportion of the national population in the East region should continue to increase, as envisaged under Strategy A, and, to a lesser extent, Strategy C? The Council is aware, when considering alternative policies, that a crucial constraint is the degree to which investments are already committed under existing policies, which will make it difficult to alter these policies in the near future. The alternative strategies to Strategy A would involve the partial redirection of infrastructural investment in order to concentrate resources on the areas in the regions which are expected to grow more rapidly, and would have implications for future public expenditure and taxation. However, it must be recognised that, in the absence of deliberate policy decisions to try to influence present trends, then, *de facto*, the outcome will be on the lines of Strategy A.

15 The Council feels that a continuation of present policies is not desirable for several reasons. First, it would imply an increasing pressure on social capital in the Dublin sub-region¹⁵ relative to other regions. This would, for example, lead to continued pressure on the price of housing and land in the area; it would also imply commuting over longer distances, with implications for investment in transport. Second, the social costs (i.e., pollution, noise, traffic and housing congestion, etc.) of a further increase in the growth rate of population in the sub-region are likely to become excessive.¹⁶ It must, of course, be acknowledged, as Dr. O'Farrell emphasises, that further information on the exact nature and extent of these costs is required. Also, to some extent, many of the problems currently facing Dublin are not simply the problems of concentration, but are related to national problems deriving from matters such as the low level of employment and inadequate past investment in infrastructure. Third, in the context of the involuntary net immigration to the Dublin sub-region, it is presumably the wish of many of these immigrants to work in their home regions rather than move to the capital to find employment.

¹⁵Defined as Dublin County Borough, Dun Laoghaire County Borough and the remainder of County Dublin.

¹⁶The social problems of large towns, particularly those of Dublin, will be examined in a forthcoming NESR Report on problems of urbanisation.

16 The Council also feels that it would be impractical to implement the most radical of Dr. O'Farrell's alternative strategies—Strategy B—with its relocation from the East region of large numbers of manufacturing and service sector jobs. The proportion of national manufacturing employment located in the East region has been declining for at least the past fifteen years, and particularly since the 1973 recession. Between 1961 and 1966, and between 1966 and 1971, employment in manufacturing in this region increased by 6.9% and 3.9% respectively; by contrast, manufacturing employment in the State increased by 10.6% and 7.6% respectively. With regard to the Dublin sub-region, its share of the total national employment in manufacturing industry was 46.8% in 1961, but had fallen to 41.8% by 1971. The only data available on the East region since 1971 suggest that this share may have fallen further since this date. (Its share of other industrial employment—mining, building and construction, electricity, etc.—also fell, from 37.0% in 1961 to 26.4% by 1971.) Between January 1973 and January 1977, the East and North-East regions were the only two which recorded a fall in industrial employment, which in the East amounted to 10,900.¹⁷ If, therefore, there is to be a relative shift in employment from this region, this shift should be concentrated on the service sector.

17 The Council considers that the aim of future policies should be not so much to stabilise the proportion of the national population in the East region, as envisaged under Strategy B, but to contain the increase in this proportion, along the lines envisaged under Strategy C. It will, however, be necessary to implement the chosen strategy in a manner which complements, rather than competes with, other national objectives, particularly that of full employment. It should be emphasised that this national objective is not necessarily in conflict with this urban and regional strategy. Unlike his Strategy B, Dr. O'Farrell suggests that his Strategy C could be implemented through the relocation of existing, or the attraction of new, service employment, without a reorientation of the manufacturing sector. Ultimately, the

¹⁷Source: IDA employment survey, published in *IDA News*, April 1976 and May 1977. No data are available on 1978 employment. Further, the *Labour Force Survey 1977* shows that in 1977, 34.6% of industrial employment in the State was in the Dublin sub-region, compared with 37.8% in 1971.

decision to opt for a particular strategy for slowing down the rate of increase in the population of the East region must depend on the feasibility and desirability of the various policies which are adopted to achieve this objective. These policies are considered in the next section.

III THE CHOICE OF POLICIES

18 In the light of the need to reduce the rate of increase of the concentration of people and jobs, particularly those in the service sector, in the East region, a number of alternative settlement patterns for a national urban system, with varying degrees of concentration, may be considered. Most of these approaches have already been examined in NIEC Report No. 26, and, again, by Dr. O'Farrell in Part II of this report.

19 One approach is the faster development of one or two counter-magnet centres to Dublin. The advantages of such a counter-magnet policy, compared with an acceleration of the rate of development of a number of smaller regional centres are, first, that infrastructural investment could be more concentrated and may be more cost-effective. Second, the chances of success, in terms of relocating jobs away from Dublin, are probably greater. Points of growth would be created which would reduce the present population imbalance between the East and other regions, through the slowing down of the rate of increase in Dublin's population share and a corresponding acceleration in the counter-magnet centres. Already Council Report No. 28 has argued that new offices and those being relocated require the attraction of a counter-magnet to Dublin. Also, there are the advantages of such a city, in terms of developed infrastructure as well as a large and varied labour pool, compared with smaller centres.

20 The requirements of such a counter-magnet policy should not, however, be underestimated. A deliberate and gradual diversion of capital and a planned programme of office development would be needed. Adequate resources for both industrial and social infrastructure would have to be made available. In addition, since the development of counter-centres to Dublin would require, in some cases, the migration

of highly skilled personnel, this problem would have to be tackled by an effective manpower policy. All these requirements would result in significant costs, to be set against the benefits to be obtained. Furthermore, the detrimental effect of the development of a counter-magnet city on other urban centres, from which planned resources may have to be diverted, would also have to be considered. A shift in emphasis towards developing one or two principal urban centres must inevitably lead to a relative shift in investment away from the East region, as there is an obvious limit to the amount of finance available for investment in infrastructure and on direct grants. Furthermore, as these counter-magnet centres develop, there will be an increasing demand for further investment. A further factor to be considered if counter-magnet cities are to be developed, is that these cities already have infrastructural problems which need to be alleviated.

21 Another approach would be the accelerated development of growth centres within the regions. The classic definition of a growth centre is a spatially clustered interlinked set of industries inducing spread effects in their surrounding hinterland. In Ireland the concept is possibly a simpler one of a geographical clustering of economic activities in specified urban centres. Although the theoretical arguments continue about the exact nature of the benefits to be derived from the development of growth centres, the Council accepts that there are arguments in their favour, such as the need to capture external economies in a region, to attract investment in manufacturing and certain services to peripheral regions, and to function as a centre for innovation and initiative in these areas.

22 As with the counter-magnet approach, the further promotion of these smaller growth centres would also involve certain costs. The main cost in this case would be borne by the outlying areas within regions since the concentration of investment in industrial activity and infrastructure in the growth centres could only be achieved at the expense of a reduction of investment in the peripheral areas. As noted above, on the other hand, the shift of investment towards counter-magnet centres would be achieved mainly at the expense of the East region.

23 It must be acknowledged that information which would enable a precise judgement of the most desirable mix of these approaches in terms of cost and efficiency is lacking. Subject to this general qualification, however, the Council would favour, at this stage, a policy of gradually accelerating the development of one or two of the largest cities outside Dublin as counter-magnets, while, at the same time, attempting to encourage the continuing development of growth centres in the regions. These centres would tend to be the largest towns in the regions outside the Dublin region. The Council feels this approach may offer the best prospect of arresting the continuing concentration of population in the East region, while recognising the constraint of the resources available. However, the pace of progress in this direction should, of course, be dictated by the need to avoid dramatic shifts in investment priorities which could result in unnecessary and undesirable adjustment costs.

IV THE CHOICE OF POLICY INSTRUMENTS

24 What policy instruments can most appropriately be applied to achieve the desired mix of counter-magnet cities and growth centres? Discrimination in the location of jobs in favour of the designated counter-magnet cities and regional growth centres could be achieved by influencing both the location of industrial and service-type employment.

25 For the reasons outlined in paragraph 16, any major attempt to shift manufacturing employment away from the East region would be undesirable for the foreseeable future. The possibility of giving greater priority to specified growth centres within regions in the location of industrial projects should, however, be examined. There seems to be little scope at present for using existing industrial incentive schemes, but some stimulus to the industrial development of regional growth centres could be achieved through greater concentration of investment in infrastructure in the centres.

26 With regard to service-type employment, the Council has already made the point that an increase in office work in the regions would be desirable for the following reasons:

"First, it is Government policy to pursue the development of the regions. Second, there is the example of other relatively small countries which have pursued policies of office development in the regions. Third, there is the great urban imbalance between Dublin and other areas. At the same time, there is a mismatch between job opportunities and labour availability in the country; most of the job opportunities in white collar and in office jobs have been occurring in the East region, but there is a widening gap between job creation in manufacturing industry and the appropriate labour supply in this region, while white collar job opportunities are limited in other regions".¹⁸

27 Service-type employment is provided in both the public and private sectors, and, in the present context, both the location of new, and the relocation of existing, employment within these two sectors should be considered. Furthermore, when examining how office employment might be attracted to the regions, potential jobs originating both from within Ireland and from abroad must be considered.

28 The potential for increasing employment in the regions through attracting new private offices both from within Ireland and from abroad appears to be limited. The relocation of existing private sector office jobs may have more potential, but is still probably limited. In the context of this relocation, the Council considers a more effective use of limited public expenditure would be achieved if efforts were concentrated on capital expenditure rather than direct incentives. In particular, an improvement in infrastructure, especially in the telecommunications system, may have more impact on firms' decisions to establish in particular locations than a set of investment subsidies, as has already been suggested in NESc Report No. 44.¹⁹ Investment in infrastructure would also help to attract new office firms from abroad. Investment in social infrastructure such as health, housing and recreational facilities might also do more to encourage labour mobility than direct expenditure on subsidies to encourage migration.

¹⁸NESC, Report No. 28. *Service-type Employment and Regional Development*, 1977.

¹⁹NESC, Report No. 44. *Comments on Development for Full Employment*, 1978.

29 A third method of increasing office employment in the regions involves the relocation of parts of the public sector.²⁰ The types of relocation which have occurred in the past ten years²¹ have been inadequate, for a number of reasons. The jobs which have been transferred have been mainly junior office ones which have not involved decision taking. Furthermore, the relocation to the type of urban centre which is envisaged here has not occurred. Finally, the numbers involved have been negligible in total population terms, although their impact, in relative terms, on the destination centres may have been more significant. The Council, therefore, considers that a meaningful commitment to public sector relocation on a more significant scale than in the past needs to be made, although it acknowledges that there are limits to the scope for this.²² It recognises that there are likely to be substantial resource costs associated with the relocation of public sector offices during the initial period of relocation, and that the scale of adjustment may be considerable, including particularly in human terms.

30 Finally, new public service agencies could be located in designated centres in the regions, and the Council regards this part of the service sector as that offering the greater potential for decentralisation. It would not appear that, when new agencies were set up in the recent past, serious consideration was regularly given to the possibility of their location outside Dublin. In some instances, the case for location in Dublin is a compelling one. But in other cases, there is no reason why location in the regions should not be contemplated. Subject to a satisfactory communications network, many public sector agencies could function just as effectively in the regions.²³

²⁰The public sector includes the civil service, local authorities and semi-State bodies.

²¹For a brief summary of the relocation which has occurred or is planned, see NESc, Report No. 28. *Service-type Employment and Regional Development*, 1977. Chapter 4, paragraph 4.3.

²²The Council welcomes the decision, announced in the recent Government White Paper, *Programme for National Development 1978-81*, in principle to implement a programme for the transfer of at least 2,000 officers in general service grades in the civil service to about eight medium-sized urban areas in the provinces.

²³The Council welcomes the statement in *Programme for National Development 1978-81* that all new Government sector services will be located outside of Dublin unless there are compelling reasons to the contrary.

31 Policy on land use in urban areas should be an essential part of regional policy. There is an urgent need for co-ordination of physical planning systems. The local development authorities are effectively independent within their five-year plans. However, there is the statutory power to effect co-ordination, and it should therefore be possible to ensure that the activities of these authorities are in harmony with regional policy goals.

V CONCLUSIONS

32 The growing concentration of population and employment, particularly service-type employment, in the East region is a fundamental urban and regional problem. The Council considers that a continuation of this trend is unacceptable. At present, there does not appear to be an explicit or, indeed, implicit set of Government policies to affect the rate at which the share of the national population in the East region is increasing.

33 The Council would, therefore, welcome the adoption by Government of an explicit policy in this regard. It believes that a policy of accelerating the development of one or two counter-magnet cities to offset the attraction of the East region, together with the continuing development of a number of smaller regional growth centres, may be the most effective means of achieving, in the long-term, a regionally balanced growth in employment and population. This would, of course, require a deliberate but gradual relative shift of public and private investment towards the counter-magnet cities and regional growth centres, at the expense of the East region and the peripheral areas within regions.

34 The Council feels that, in developing counter-magnet cities, the emphasis should be placed on encouraging the location of new, or relocation of existing, public and private service-type jobs away from the East region, with perhaps the greatest scope lying in the area of new public sector jobs, where influence can be exerted directly by Government. Nevertheless, some relocation of private sector service employment could be encouraged through investment in infrastructure in the designated counter-magnet centres.

35 In view of the relative lack of expansion in industrial employment in the East region at the present time, the scope for relocating planned industrial jobs elsewhere seems limited for some time to come. The Council would suggest, however, that attention be given to the possibility of concentrating more industrial employment within regions to derive the advantages which growth centres offer.

36 The problems posed by the current trends in urbanisation in this country are important for regional policy. In this report, the aim has been to highlight the problem and to suggest possible directions in which official policy should proceed. It is acknowledged that a number of matters touched on in this report need further elucidation before definite decisions can be taken. For example, more information is required on the adjustment costs, in both financial and human terms, to which shifts in investment priorities would give rise before specific policies could be adopted. More information on the feasibility and efficiency of different policy instruments is also required. But it should also be recognised that, particularly in the field of regional policy, where the perspective must of necessity be long-term, certainty about the eventual outcome of alternative policy decisions, although desirable, can never be reached. To delay decisions while striving for the ideal would therefore be ill-advised.

37 In an earlier NESC report,²⁴ the Council concluded that:

"there is no clearly articulated policy for regional economic development."

Among its recommendations on how such a policy should be developed it included the following:

"Given the importance of regional development, it is essential that there should be, and should be seen to be, a real commitment to regional development at the very highest level. It is our view that, without political involvement, it will be difficult to achieve progress towards the development and effective

²⁴NESC, Report No. 22, *Institutional Arrangements for Regional Economic Development*, 1976.

implementation of regional plans and policies. We recommend, therefore, that a Minister should be assigned responsibility for regional policy."

38 The Council welcomes the fact that responsibility for regional policy has now been assigned to the Minister for Economic Planning and Development. It is hoped that this will provide the necessary impetus for formulating an adequate regional development policy and for establishing the institutional framework for its implementation.

PART II

URBANISATION AND REGIONAL DEVELOPMENT IN IRELAND

P. N. O'FARRELL

CHAPTER 1

INTRODUCTION

1.1 This study focuses attention upon one dimension of the medium and long-term development problems of Irish society: the complex processes underlying the relationship between urbanisation and regional development. In terms of the economic factors which operate within the region, it is clear that as a functional entity the region has a very shadowy existence (Broadbent, 1976, page 5). The largest and most significant economic linkages tend to occur within urban areas and between urban centres rather than across regions. This provides sufficient justification, of itself, for a consideration of the urban component in Irish regional development. In addition, Professor David Donnison has asserted that one of the five major causes of inequality is the urban-rural/inter-regional differential (NESC, Report No. 8, p. 9). Furthermore, the urban dimension of Irish regional development has been relatively neglected, although the growth of the Irish economy and the employment opportunities provided by that growth are tending to become more concentrated in the urban system. The spatial concentration of activities in large towns and cities encourages a higher degree of specialisation and permits a greater intensity of interaction and exchange of information and goods than if such activities were dispersed in a small-town-rural environment¹. Consequently, the development of urban areas is important in maintaining high rates of economic development and in increasing real *per capita* incomes.

1.2 Any definition of urbanisation is bound to be somewhat unsatisfactory because of the range and complexity of processes

¹There are certain types of manufacturing plants—notably those which do not require access to external economies—which operate more efficiently in non-metropolitan environments.

underlying it.² The concern of this paper is with the complexities of urbanisation and its relationship with regional development and policy. Clearly, there are a number of factors which together are producing an increasing spatial concentration of activities and population. These include the long-run trends of declining agricultural employment, marginally increasing manufacturing employment (with declines in some groups and rapid expansion in the newer grant-aided activities) and increases in service employment. There are also gradual changes in the locational patterns of recreational, educational and health facilities which are becoming more centralised in large towns; while new retail functions tend to concentrate in more populous urban centres. Furthermore, improvements in mobility and in the communications system are contributing towards the increased spatial concentration of population and activity, while simultaneously the age structure of urban populations sustains higher rates of natural increase. The urbanisation process is concerned not only with the spatial pattern of urban growth but also with the factors underlying and associated with such growth and their distribution both within and between urban centres.

1.3 There is a complex series of interdependent decisions taken by private individuals, firms and public organisations which have influenced urban development. The state of knowledge concerning many of these processes is, however, still relatively underdeveloped. Some of the more important questions relevant to the relationship between urban and regional development in Ireland include:

What are the major demographic trends in the urban system?

²Broadbent has defined an urban area as "a place limited in space within which the population can and do interact with each other on a daily basis to produce goods and consume their daily needs". (Broadbent, 1977, page 114). Hall points out that there is usually a choice of alternative definitions of an urban area—a "physical" one and a "functional" one (Hall et al, 1973). These categories correspond to the difference between the specifically human aspect of an economic system, namely, activities of groups and individuals, on the one hand, (e.g., work, travel) and the inanimate objects and products of the activity on the other, that is, the commodities produced and consumed, the buildings, vehicles and roads used (Broadbent, 1971). The functional definition implicitly assumes that daily commuting flows are the most important type of intra-metropolitan linkage.

What sizes and spatial arrangement of urban centres leads to the most efficient use of resources—i.e., what contribution does urban growth make to national economic growth?

What is the relationship between increasing industrialisation—as in Ireland—and the expansion of the urban system?

What are the types, magnitudes and directions of growth transmission flows within the Irish urban system?

Does this spatial pattern of inter-urban linkages reveal substantial leakages from regions without major urban centres (e.g., Midlands, and North-West) towards major cities such as Dublin and Cork? If such patterns are observable, then a unit increase in manufacturing output in, say, Mullingar, Tullamore or Sligo may have a greater multiplier effect in Dublin or abroad than in the local region, although, obviously, any unit increase in output is preferable to none. These questions will be addressed in subsequent sections of this study.

1.4 Regional policy in Ireland has paid insufficient attention to urbanisation as an influence upon regional growth performance. Urban planning should form an integral element of regional and national planning as it is concerned with the most important sub-processes underlying regional growth: employment change by sector; the adoption of innovations; investment in manufacturing and service activities; the development of external economies³ which permit cost

³There are two sub-sets of external economies—*Localisation economies* and *Urbanisation economies*. These may be defined as follows: Localisation economies exist for all firms in a single industry at a single location, consequent upon the enlargement of the total output of the industry at that location. Urbanisation economies exist for all firms in all industries at a single location, consequent upon the enlargement of the total economic size, population, income, output, wealth of that location, for all industries taken together (Isard, 1956, page 172). *Urbanisation economies* are sometimes referred to as *agglomeration economies* and imply the economies inducing people and activities to cluster together. Richardson has classified agglomeration economies into household, business and social agglomeration economies (Richardson 1973b). This reflects the distinction between consumption externalities and production externalities. Social agglomeration economies are of two types: efficiency in public services, a benefit shared by both households and firms; and the function of the large city as a source for innovation (Richardson, 1978, p. 306).

reductions and further expansion for manufacturing and tertiary activities, and so on. An important element in regional policy is the predicted level of urban growth and the distribution of such growth (including its underlying components) between different centres in the urban hierarchy. Hence, there is a need to comprehend the processes operating both within and between urban centres. Despite the importance of the urban dimension in regional development, few developed countries—with the exception of France—operate a national urban strategy as a basic component of regional policy. The Irish Government holds at least two major objectives in common with others in Western Europe:

- (i) the desire to reduce increasing population concentration in the largest metropolitan centre, and
- (ii) the desire to stimulate growth in the less developed regions and smaller towns.

This suggests the necessity for both a comprehensive national urban strategy—which we have not got—and a spatial perspective on economic development—which we have. The Government statement on regional policy on 19th May 1969, recognised the need to control the expansion of Dublin, but it is clear that influencing the location of industrial employment has not prevented increasing concentration of population in Dublin and the East region, produced primarily by the growth of service-type employment—the location of which is not the subject of active Government policy. Even where Governments have pursued locational strategies for service-type employment (as in the UK) it has proved more difficult than manufacturing employment to relocate in development areas. This paper is concerned with some of the more important conceptual and definitional issues in the debate; and, in this context, it is important to highlight those areas where existing knowledge of the processes of change in the Irish urban and regional system is inadequate for the purpose of policy formulation.

1.5 Towns function as an integral part of a national, urban and economic system—a crucial dimension of which is its level of external interdependence. Linkages with head offices located in the urban

systems of the UK, Europe and the USA—from where major decisions on investment and purchasing may be made—reduce the freedom of the Government to articulate and change the urban system in line with its objectives, as does the requirement of many organisations to be accessible to a range of services. There is a need to review briefly the growth performance of towns by size group; and population and service activity data will enable conclusions to be drawn concerning the pattern of change over time. Town size distribution analysis should be an important part of national urban policy. In Ireland the size distribution of towns which results from the application of policy tools may be regarded as a potential instrument of national and regional development. The heavy concentration of population in the Dublin conurbation, the degree of spatial welfare differentials, the sparsity of metropolitan centres and the very high rate of population growth make it imperative to develop and implement a national urban policy. These issues will be discussed in subsequent chapters and, in Chapter 10, alternative strategies for the urban system will be proposed. These are designed to initiate debate on the future of the Irish urban system as a prelude to the formulation of specific policies.

CHAPTER 2

THE IRISH URBAN SYSTEM: DEMOGRAPHIC TRENDS

2.1 The process of urbanisation in Ireland has been proceeding rapidly during the past two decades. The overall rate of population increase in aggregate urban areas (towns of greater than 1,500 population) has far exceeded the national rate of population growth: between 1961 and 1966 the respective rates were 8.6% (urban population) and 2.3% (national) while for the 1966-71 period the rates were 7.7% and 3.3%, respectively. This has produced a shift in the proportion of the total population dwelling in aggregate urban areas from 41.5% in 1951 to 46.1% in 1961 and 52.2% in 1971. If the Dublin-Dun Laoghaire area¹ is excluded, the proportion of the population in the remainder of the State living in aggregate urban areas was 35.3% in 1971—having risen from 25.5% in 1951. The absolute increase in the aggregate urban area population has risen sharply since 1961. From 1951 to 1956, the aggregate town area population rose by 13,000 and from 1956 to 1961 by 12,000. From 1961 to 1966, however, the increase amounted to 112,000 persons, and from 1966 to 1971 the aggregate town area population rose by a further 111,000 persons. A high proportion (59%) of this increase of 111,000 was located in the East region, which is dominated by the Dublin-Dun Laoghaire area.

2.2 The twenty largest towns have increased their share of the national population from 33.8% in 1951 to 37.2% in 1961, with a further rise to 41.3% in 1971. Of greater interest is the fact that the

¹This is defined as Dublin County Borough, Dun Laoghaire County Borough plus population of suburbs or environs.

population of the Dublin-Dun Laoghaire area as a proportion of the total population of the twenty largest towns has remained remarkably constant: 63.4% in 1951; 63.2% in 1961; and 63.3% in 1971. This reflects almost identical population growth rates between 1951 and 1971 in Dublin-Dun Laoghaire (+22.6%) and in the aggregate population of the towns ranked 2-20 in population (+23.0%).² The population of Dublin-Dun Laoghaire rose by 143,645 in the 1951-71 period while the aggregate population of the urban areas ranked 2-20 in the hierarchy expanded by 84,366 persons. The population of the Dublin-Dun Laoghaire area increased by 69,411 (10.43%) between 1961-1966, and by a further 43,160 (5.87%) between 1966 and 1971. During the same period the aggregate population of the towns ranked 2-20 in the national hierarchy in 1961 increased by 27,154 (7.05%) and by 37,841 (9.18%) (Table 1). Hence, the towns ranked 2-20 achieved a higher growth rate during 1966-1971 than the capital, but the *absolute size disparity* between their aggregate population and that of Dublin-Dun Laoghaire area continued to increase. The population of the Dublin-Dun Laoghaire area rose by 112,571 (16.9%) between 1961-1971 while the aggregate population of all other 30 towns above 5,000 population in 1961 increased by 74,211 (16.59%) during the same period. Hence, the growth rates were almost identical but the absolute increase in Dublin-Dun Laoghaire exceeded the aggregate increment of the next 30 towns by 38,360. It is valuable to compare recent trends in the two major cities Dublin and Cork with respect to a wider area which encloses a zone of maximum interaction around the cities, including the journey-to-work catchments. The population of the *Greater Dublin area*³, including parts of counties Wicklow, Kildare and Meath from where people commute daily, increased by 150,711

²These trends have occurred against a reduction in *per capita* income disparities at county level between 1969-1973, see NESC, Report No. 30.

³The Greater Dublin area is defined as Dublin county plus Rathdown No. 2 Rural District, Rathdrum Rural District, Balinglass Rural District, Bray Urban District, Wicklow Urban District and Arklow Urban District in County Wicklow; Naas No. 1 Rural District, Celbridge No. 1 Rural District, and Naas Urban District in County Kildare; and Dunshaughlin Rural District and Trim Urban District in County Meath. Hence the area is bounded by and includes Arklow to the south; Balinglass to the south-west; Kildare and Maynooth to the west; Trim to the north-west and Balbriggan to the north.

(18.3%) between 1961-1971, while that of the *Greater Cork area*⁴ rose by 24,589 (15.6%) during the same period: the difference between their populations increased by 126,122 to 792,180. The growth rates of the Greater Dublin area were also greater for the 1961-66 and 1966-71 periods (see Table 1). It is also interesting to note that the population increase of the Greater Dublin area between 1961 and 1971 (+150,711) exceeded that of the Dublin-Dun Laoghaire area (+112,571) indicating a net growth of 38,140 in the hinterland *beyond* the suburbs of Dublin and Dun Laoghaire. This represents a growth rate of 24.1% in this outer zone compared with one of 16.9% in Dublin-Dun Laoghaire. The population of this outer zone has probably continued to grow rapidly since 1971. Finally, the three major cities outside Dublin (Cork, Limerick and Waterford) are compared with the capital and the results show their aggregate growth rates in population between 1961-1966 (10.28%) and between 1966-71 (7.26%) are very similar to those of Dublin (Table 1). All these results indicate that, relatively, growth within the upper end of the Irish urban system has not been redistributed towards Dublin at the expense of other large towns; but also there has been no relative redistribution of growth away from the capital towards other major centres. A proportional *status quo* has been maintained over the past 20 years between the Dublin area and the next largest 19 towns in the national hierarchy; but although comparability in growth rates has occurred, the *absolute size disparity* between Dublin and the major provincial cities has increased substantially.

2.3 There is evidence that these population growth rates have not been confined to the upper end of the size distribution. The total population of the twenty largest towns as a percentage of the total population in all towns and villages over 500 population declined from 75.6% in 1951 to 73.3% in 1961 and to 72.9% by 1971. This trend must be interpreted with caution as, although the number of centres in the twenty largest towns remains constant over the period (by definition), much of the population growth in lower tiers of the hierarchy may be attributed to an increasing number of centres. The

⁴The Greater Cork area is that defined by Cork Corporation for the Input-Output study: it includes Ovens to the west; Watergrasshill to the north; Midleton and Castlemaryr to the east; and Crosshaven and Ballinghassig to the south.

number of towns in the population range 5,000-10,000 increased from 16 to 24 between 1951 and 1971; and the number of settlements in the 500-5,000 size category rose from 160 to 225 (Table 2).

2.4 The data in Table 2 indicates that all urban size classes above 500 population increased their respective shares of the national population between 1951 and 1971. Some of this rise in population shares is explained by the increased *number* of towns in all of these size groups, and the structure of the national urban size distribution inevitably means that new entrants to any size class tend to be clustered in the lower rather than the upper ranks of the distribution. Hence, the population growth rates in the Dublin-Dun Laoghaire area (+22.6%) and the following 19 towns in the hierarchy (+23.0%) cannot be validly compared with equivalent rates for towns in the 500-1,500 (+32.8%), 1,500-5,000 (+16.3%) and 5,000-10,000 (+56.2%) categories for two reasons. First, the number of urban centres within each of these size groups has increased substantially over the 1951-1971 period (see Table 2). Second, on statistical grounds, the lower absolute population sizes of certain categories is more likely to be associated with a greater percentage growth rate simply because the denominator is small. Nevertheless, the increased number of settlements within all categories below 25,000 population is evidence of population expansion throughout the system. However, of the total population increase of 327,767 throughout aggregate urban areas (greater than 1,500 population) between 1951-1971, 43.8% of it (143,645) was located in the Dublin-Dun Laoghaire area and some might argue that this constitutes an unacceptable degree of concentration in both urban and geographical space.

2.5 Between 1966 and 1971 the population of five regions—East, South-East, South-West, Mid-West, and North-East—increased while that of the other four continued to decline. Population decrease in the period 1971-75 was limited to the West, the North-West and Donegal, but in these regions it occurred at a greatly reduced rate when compared with earlier inter-censal changes (Walsh 1978, p.2). Regional variations in the degree of urbanisation within Ireland range from the highly urbanised East (84.0% in aggregate urban areas) to the predominantly rural Donegal region (13.7% urban) (Table 3). The

Town Size Class	Population Shares and Number of Towns by Size Class 1951, 1961 and 1971					
	1951 Share in Total Population (%)	Number of Places	1961 Share in Total Population (%)	Number of Places	1971 Share in Total Population (%)	Number of Places
Dublin-Dun Laoghaire	21.4	1	23.5	1	26.1	1
25,000 - 150,000	6.5	3	6.9	3	8.7	4
10,000 - 25,000	4.3	9	5.2	10	5.3	11
5,000 - 10,000	3.3	16	3.8	17	5.1	24
1,500 - 5,000	6.0	65	6.7	67	6.9	73
500 - 1,500	3.3	95	4.7	141	4.3	152
Population in Towns exceeding 1,500 as a Percentage of Total Population	41.5		46.1		52.2	
Total Increase 1951-1971						

Source:—Census of Population of Ireland, 1951, 1961 and 1971 (Volume 1), The Stationery Office, Dublin.

TABLE 2

Urban Population Change 1961-1971	Census of Population of Ireland, 1961, 1966, and 1971 (Volume 1), The Stationery Office, Dublin.					
	1961	1966	Absolute Change 1961-66	Percentage Change	1971	Absolute Change 1966-71
Dublin-Dun Laoghaire	665,556	734,967	+69,411	+10.4	778,127	+43,160
All Towns Ranked 2-20 in 1961	385,214	412,368	+27,154	+7.1	450,209	+37,841
Greater Dublin area	824,045	905,378	+81,333	+9.8	974,576	+69,378
Greater Cork area	157,987	169,906	+11,919	+7.5	182,576	+12,670
Cork, Limerick and Waterford	195,372	215,463	+20,091	+10.3	231,108	+15,645
Dublin-Dun Laoghaire	665,556	778,127	+112,571	+16.9		
All Towns of greater than 5,000 Population in 1961	447,225	521,436	+74,211	+16.6		
	1961	1971	Absolute Change 1961-1971	Percentage Change		

TABLE 1
Urban Population Change 1961-1971

1961 and 1971 (+1,945) only just exceeds the net outflow of those born in Dublin (-1,854) (Walsh, 1978, p.7). The East region's high rate of natural increase has been an important factor in accounting for its rapid population growth since 1966: of the 154,000 increase in the East's population since 1966, only 14,000 has been due to net migration (Walsh, 1978, p.7). Between 1970 and 1975 the East region accounted for 48.5 per cent of the total natural increase in the country—a considerably larger share than its share of the total population (Ross, 1978, p.304). The annual average rate of natural increase in the East in 1971-1975 (15.3 per 1,000 initial population) is more than two-thirds higher than in the rest of Ireland (9.1 per 1,000 initial population). The natural increase potential⁶ in boroughs and urban districts (14.0 per 1,000 population in 1972) is almost one and a half times that of rural districts (9.8 per 1,000) and the rural figure is exaggerated by the inclusion of births and deaths in the environs of urban areas (Travers, 1976, pp.30-31). The natural increase per 1,000 population in the rural districts of Connacht (3.2) and Ulster (4.87) in 1972 was less than one third of the rate in boroughs and urban districts (Travers, 1976, p.31). Hence, in terms of government regional policies, the objective of limiting Dublin's growth to its natural increase—in so far as the limited data available will permit interpretation—has largely been achieved (as the 1961-1971 net migration data indicate at county level), but at a cost—in terms of regional equity—of substantially increasing Dublin's share of the national population. Some attention will be devoted later to the policy implications of abandoning this goal and seeking to achieve significant net outward migration from the Greater Dublin area to other regions.

2.7 The projections of Ross suggest that even if each region is curtailed to its own natural growth rate (i.e., no internal migration or emigration), the East region will increase its total population to 1,343,000 by 1986 and its share will rise from 35.7% in 1971 to 38.0% in 1986 (Ross 1977). Under the assumption of internal migration (representing a modified extension of recent trends) 53.8% of the national population increase of 522.4 thousand between 1971 and 1986 will be located in the East region (an increment of 281.1 thousand) and its population share will be 38.4% (Table 4). Despite the

⁶This is measured by births minus deaths per 1000 population.

Regional Population Projections 1986¹

TABLE 4

Region	Population 1971 (in thousands)	Projected Population 1986 assuming no internal or external net migration	Projected Population 1986 assuming migration ²	Projected Share of 1986 Population assuming migration
East	1062.2	1334.3	1343.3	38.4
South-West	465.7	549.3	552.3	15.8
South-East	328.6	391.8	393.8	11.2
Mid-West	269.8	318.7	318.7	9.1
West	258.7	277.9	267.9	7.7
Midlands	232.4	254.1	248.1	7.1
North-East	173.8	195.7	191.7	5.5
Donegal	108.3	114.8	110.8	3.2
North-West	78.6	78.0	74.0	2.1
Total	2978.2	3514.6	3500.6	

¹National totals are based upon Keating (1977).

²The migration estimates are based upon a modified extension of recent trends (see Ross M. (1978) pp. 304-305).
³Source: Ross M. (1977 mimeo) "Regional Disparities".

large size of its base, the projected population growth rate of 26.5% in the East region exceeds the rate of all other regions (Table 4). The only other regions where substantial population growth is projected are the South-West (+86.6 thousand, 18.6%) South-East (+65.2 thousand, 19.8%) and Mid-West (+48.9 thousand, 18.1%), all of which would retain their 1971 share of national population. All other regions face the prospect of a continuing decline in their share of the national population.

2.8 This rapid increase in urbanisation—arising mainly from natural increase rather than internal migration and far exceeding aggregate population growth—has important implications for regional and national planning, especially against a background of continuing population growth. It is likely that urban areas will absorb approximately one million extra people between 1971 and 1991 if urban population levels continue rising at more than twice the rate of national population growth (Travers, 1976, p.31). This scale of urbanisation will place unprecedented pressures upon land and infrastructural investment and emphasises the need for a national urban policy. If it is assumed that the regional population projections for 1986 in Table 4 are in conflict with society's objectives, any policy to reverse the trend, given the high rate of natural increase in Dublin, will imply the need to induce people to move away from the capital. In Ireland, the policy has been one of subsidising job creation in the regions, which acts as an indirect influence upon migration. This is consistent with many empirical findings which show that the existence of job opportunities is a key influence upon migration. In a country as small as Ireland "the tyranny of distance" is less of a disincentive to migration than elsewhere and policies to influence the inter-regional flows of new productive investment should influence the structure of internal migration, even without an *explicit* migration policy. However, if the Government orientates its policy towards reducing the rate of increase in the East region's share of the national population, then net outward migration from the capital to the regions will be essential and measures to promote the mobility of labour may be required in addition to a more vigorous regional employment policy.

CHAPTER 3

URBAN RANK STABILITY: IRISH EVIDENCE

3.1 All urban size distributions are strongly skewed to the right, i.e., there are many very small towns and few large cities, with the tendency for the number of settlements in each size class to decline with increasing size. Most urban size data are about equally well described by a number of skewed distributions—especially the log normal or Pareto distributions¹. (Parr, 1970). There is a remarkable

¹The size distributions of urban centres conform to the rank size rule in some countries but not in others. The rank size distribution is given by:

$$r_x = aP_x^{-b} \quad (1)$$

Where P_x = population of centre x , r = urban rank, and a and b = constants

This can be written as

$$\log r_x = \log a - b \log P_x \quad (2)$$

A special case of the rank size distribution is obtained when $b = P_1$ (the population of the primate city) and $b = 1$

$$P_x = P_1/r_x \quad (3)$$

The b value for the Irish urban system is 1.15 which may be compared with values of 0.98 (U.K.), 1.23 (France), 1.41 (Belgium) and 0.92 (The Netherlands) (Richardson, 1973a, p. 162). Where $b = 1$ the rank size rule holds. There is no body of economic theory to explain why the distribution of urban sizes approximates a rank size fit but there is support for a stochastic process explanation (Simon, 1955, Curry, 1964). However, this does not reveal how individual towns grow or how the mechanism underlying the development of systems of towns function. The size distribution of towns is not independent of either their spatial distribution or their age distribution (Richardson 1978, p. 332). The rank size relationship is an empirical relationship and there are no *a priori* grounds for concluding that a high degree of primacy (i.e. where b is greater than 1) departs substantially, if at all, from an optimal pattern. The rank size rule is too crude a measure to be of any significance for policy purposes.

degree of stability in the rank order of towns by population size in the upper levels of the Irish national urban system, despite the strongly contrasting demographic trends of the 1950s and 1960s.² Of the 10 largest urban centres in 1951 only one, Wexford, had been relegated (to 11th) by 1971 (to be replaced by Kilkenny) and all of the other towns in the top ten maintained the same rank order position throughout the 20 year period—except for Sligo and Bray which exchanged places. (Table 5). There were only two towns from the top twenty largest in 1951—Thurles and Ballina—which had been replaced by 1971. Mullingar entered in 1961 and Cobh—reflecting the spillover effects from Cork city—entered in 1971; Tullamore which was relegated in 1951 reappeared as the 19th centre in 1971; but Enniscorthy entering at 20th in 1961 had been relegated a decade later. (Table 5). Ennis achieved the greatest upward mobility through the rank size distribution during the period moving from 20th in 1951 to 15th in 1971 (Table 5). The persistence of the size distribution through time in so many contrasting countries is one of the most notable regularities in the social sciences. Once a few urban centres rise to the highest ranks of a national urban system they are highly unlikely to be displaced from their positions of dominance (Pred, 1977, page 34). By contrast, the probability of size rank change for smaller towns appears to be negatively related to their population size. The inference is that any policy instruments designed to substantially alter the upper end of the rank size distribution—if this is considered desirable—are unlikely to be successful, except possibly in the very long term. Measurable changes within a period of two decades would require massive public intervention in land use and location decisions.

²The degrees of freedom of centres to change rank within the size distribution differ from one rank to another. The largest centre can only either retain its first position or fall to a lower one; the smallest place can only either retain its rank or increase it. The place in the centre of an array is the only one with an evenly balanced probability of plus and minus changes (Robson, 1973, p. 40). Since the size distribution of places is highly skewed, the absolute difference in population between adjacent ranks at the upper and lower ends of the distribution will be very different. Hence, slight differences in growth rates of small places might lead to marked changes of rank, whereas even substantial differences in growth rates of large places may produce no changes in rank. Consequently, stability in rank order at the upper end of the distribution and fluctuation at the lower end cannot be translated into suggestions about variations in growth rates of the set of centres. (See Robson, 1973, pp. 40-41).

TABLE 5
Rank Size Distribution 1951, 1961, 1971

Town	Population Size ¹	
	1961	1971
Dublin/Dun Laoghaire	634,472	663,389
Cork	112,009	115,689
Limerick	50,820	51,732
Waterford	28,691	28,216
Galway	21,316	23,700
Dundalk	19,678	21,228
Drogheda	16,779	17,085
Sligo	13,529	13,145
Bray	12,062	12,615
Wexford	11,979	12,247
Tralee	11,045	12,081
Kilkenny	10,572	11,423
Clonmel	10,471	11,087
Athlone	9,015	10,727
Carlow	7,667	8,920
Killarney	6,298	8,410
Thurles	6,276	7,442
Ballina	6,220*	6,825
Tullamore	6,165*	6,642*
Ennis	6,097	6,251*

Source: Census of Population of Ireland 1951, 1961 and 1971 (Volume 1), The Stationery Office, Dublin.
 Note: Population includes Suburbs or Environs.
 *Indicates towns which were relegated from Top 20 in subsequent Census.

CHAPTER 4

THE CITY SIZE PROBLEM

The Concept of Optimal City Size

4.1 One approach to the theory of city size is to examine how costs and benefits vary with city size which may aid in deriving an optimal city size where marginal benefits equal marginal costs. However, the partial static, single-valued definition of optimal city size simply proposes that a specific city at a particular point in time might improve the welfare of its residents by growing larger or smaller (Wingo, 1972). Hence, the optimal size of city concept provides us with no capacity to deal normatively with sets of independent cities, much less of interdependent cities, nor with a single city in its historical or evolutionary setting, nor with cities in terms of their relationships with the rest of the world—an increasingly important process in urban growth (Wingo, 1972, p. 17). The issue of size must also be viewed in its explicit *spatial* context, the location of a town *vis-à-vis* other large cities implies that the question of optimal size is not appropriate: Dun Laoghaire, a suburb of 98,379 people in 1971, can hardly be compared with Cork (134,430) which is located in the heart of a rural-agricultural region far removed from other metropolitan influences. It has been argued convincingly by Richardson, Mills and others that the search for a unique optimal city size is futile and the reader is referred to the original sources for a summary of the debate (Richardson, 1972 and 1978; Mills, 1972). There is no evidence that there is any single optimal city size but this raises the question of the absolute size of Dublin and whether its future population growth rate should be reduced and the allied problem of how to distribute the population efficiently over the national urban system.

The Costs and Benefits of City Size

4.2 Adam Smith, in 1789, wrote that the "commerce and manufactures of cities instead of being the effect, have been the cause and the occasion of the improvement and cultivation of the country" (Smith, 1789). This defines the dilemma facing any attempt to formulate a consensus on national urban strategy: urban areas are a major element in facilitating high rates of growth and job creation; but urban-based development may produce social inequalities, geographical polarisation of activities and environmental deterioration. Hence, any decision to attempt to control urban growth at specific locations—for example, Dublin—involves difficult relative trade-offs between the advantages and disadvantages created by such a policy. In general, the advantages which a large urban centre offers to a given economic unit depends upon (i) the size of the centre; (ii) the diverse nature of its labour force which will contain more highly skilled people; (iii) its economic structure as it influences the opportunities to avail of external economies; (iv) its location relative to other centres and (v) its integration into the national inter-urban system, which is partly a function of the quality of the communications networks linking the economic activities of a town with the rest of the nation and abroad. A large city also permits economies of scale in consumption (the opportunity to make multi-purpose shopping trips and compare prices for the same goods in a number of outlets) which are realised because of the large population required to support infrequently-used services. Residents in small urban places are more likely to face a local monopolist when purchasing goods and services. Urbanisation is not simply the spatial organisation of a set of activities; the process of urban expansion may be affected by the growth in incomes but it also influences the further growth of those incomes.

4.3 The evidence of variation in externalities with urban size tends to be incomplete. Furthermore, those who offer assessments about certain cities being "excessively large" have generally based their judgements "not on scientific sifting of evidence, but on value judgements, implicit but untestable weighting systems and arbitrary selection of a limited set of criteria" (Richardson, 1973a, p. 121). Many of the external benefits and costs are so difficult to measure that it is not possible to identify how they vary with city size. This applies to

urbanisation economies for manufacturing industry, consumption externalities, innovation potential, air pollution, traffic congestion, noise, crime risks and exposure to stress, among others (Richardson, 1978, p. 324). In addition, the aggregation and weighting problems—even for those benefits and costs which are measurable—are insoluble. Little has been discovered about the relationships of private costs (i.e., producers' and consumers' costs) to urban size and the evidence is inconclusive (Alonso, 1970). There is evidence that labour productivity increases with town size—possibly as a result of external economies. Sveikauskas has shown that labour productivity in American cities is on average 6 per cent higher with each doubling of city size; and Hoch has demonstrated that people earn more in *real* terms (even when allowances are made for cost of living indices) in large towns, a finding sustained even by the variation in earnings of specific occupations (Sveikauskas, 1975; Hoch 1972), although controls for industry type should also be applied. Mera, using Japanese data, has shown that "since the average productivity is found to be higher in larger centres, there is no reason to believe that the marginal productivity in larger metropolitan areas is less than that in smaller urban centres". (Mera, 1973, p. 319). Tisdell argues that it is the rather ambiguous concept of "well-being" (welfare) that is the more important goal in framing national urban policy (Tisdell, 1975). He asserts that "well-being" curves for settlements *may* become concave when their population rises to high levels even though income curves remain convex. There is a serious problem in interpreting these results. Do higher incomes reflect higher productivity or are the former a compensating payment for the negative externalities and other disutilities (overcrowding, pollution, long work journeys, etc.) of city life? Higher incomes may reflect both the higher productivity and inconvenience of cities and there is no way of isolating their separate effects (Richardson, 1978, p. 310). There may be an aversion to crowding, pollution and environmental problems which become important in large cities; but many of these issues can be alleviated by appropriate pricing policies, although such instruments are complex and may produce side-effects which can be difficult to predict, e.g. the effect of road pricing on income distribution. Also, some of these problems, in particular traffic congestion, are more related to the *spatial structure* of the city than to its size. Congestion results almost

entirely from the concentration of activities near to the centre of cities rather than from the overall size of the metropolitan area. It may be alleviated by a range of policies designed to affect a change in the private/public transport split for the journey to work (for a discussion of strategies proposed for Dublin, see O'Farrell and Markham, 1975) in conjunction with infrastructural strategies, land-use zoning and decentralisation of job opportunities.

4.4 It has been questioned whether city size is a truly independent variable when the relationship is examined between certain economic and social phenomena and city size (Richardson, 1973a, p. 7). Certain costs and benefits vary not only *directly* with the population of the city, but also with the spatial structure of the urban area, variations in population density and its spatial relationships with other centres. Some analysts, notably Wingo and Mills, have suggested that spatial structure may be a more important influence upon urban efficiency than absolute size (Wingo, 1972; Mills, 1972). However, some phenomena are undoubtedly a direct function of city size: many urban services require critical population thresholds in order to be viable—and, hence, size is a casual variable for a range of activities. In other cases, size may be an intervening variable but is not the truly exogenous variable itself: Haynes, for example, in analysing the relationship between crime and city size in the United States found that it was the density of opportunities rather than the number that was important (Haynes, 1973). Alonso has also suggested that problems such as poverty and race are "problems *in* cities not problems *of* cities" (Alonso, 1971a p. 6). Cities are the locales for many problems which might appear with approximately the same intensity whatever the town size distribution. Johnston claims that there are problems *of* cities and that the way to reduce inequalities is to implement settlement size redistribution policies (Johnston, 1976). Richardson has argued that many "city size problems" are not the result of urban scale and that to attempt to solve them by town size distribution policies will be inefficient or ineffective (Richardson, 1977). If the objective is to change the distribution of welfare in Ireland it is probably more efficient—in the short term—to redistribute income among persons than to redistribute people among places within the country. In the long term, the spatial and urban distribution of population and the

externalities, both positive and negative, which arise therefrom will assume a greater significance; the economies of certain urban areas and regions may be in long-run decline leading to high structural unemployment and poverty. Such problems require place-specific policies to regenerate the economic base as a complement to policies of income redistribution.

4.5 A key feature of large cities such as Dublin is the rate of innovation and its subsequent diffusion to smaller towns—a process which benefits the economy as a whole. There is some empirical evidence to support the contention that innovation in large cities remains important for extending growth throughout the national economy: the probability of adoption is strongly associated with city size (Pedersen 1970), although not necessarily causally. It is the existence of a range of urbanisation economies that is the causal factor and not city size *per se*; yet these services—such as business consultancy firms—require a minimum level of demand in order to be viable and such demand is usually concentrated in urban areas. Consequently, the ability of a city to attract tertiary functions and technologically advanced manufacturing plants from abroad is *indirectly* related to size through the broad correlations between the latter variable and a number of causal factors. However, whether the increment to the East region's population between 1975 and 1986 is 150,000 or 200,000 it is unlikely to affect the potential of the Greater Dublin area to attract tertiary functions from abroad such as research and development activities. Conversely, to achieve, for example, a "redirection" of 40,000 of the East region's projected population increase to a major provincial centre might significantly influence its growth potential.

4.6 In general, the notion that the primate city of most developed countries has grown to an "excessive" size and ought to be constrained in some way owes more to political conviction than it does to a body of theory and evidence. There has been limited progress with respect to identifying whose welfare is adversely affected when the primate city grows. If the rest of the national population loses because of uncontrolled growth in the primate city, then a policy of growth control accompanied by efforts to accelerate growth in alternative urban

centres and regions is appropriate. Conversely, if the primary incidence of the scale effects are internal to the Dublin city region, then policy adjustments within this area may be all that is necessary. There may or may not be a case on *efficiency* criteria (private and social) for restricting the growth of Dublin.¹ At present, there is insufficient data upon which to come to a rational conclusion. International evidence would suggest that the problem with Dublin is not its size *per se* but the failure to cater adequately for this increasing size through sufficient investment in infrastructure. There may, of course, be a case on equity grounds for trying to control the *growth rate* of the capital relative to other urban centres in the nation. Such a policy of redirecting some of the potential population growth in the Dublin-Dun Laoghaire area to other major provincial centres need not incur sacrifices in national economic growth if appropriate locational policies are pursued. The crucial issue is not whether Dublin is too big or smaller towns in the provinces too small, but whether the changes in the spatial structure of the Irish urban system and, in particular, the increasing concentration of population in the Greater Dublin area, are in harmony with the goals of the community.

¹There are other problems in the Dublin conurbation such as congestion, the physical and social decline of inner areas, local pockets of high unemployment and pollution which require the attention of policy-makers. However, the major policy responses in these cases are likely to be within the framework of land use policies, job creation programmes and pricing rather than an attempt to control the absolute size of the city and its environs.

CHAPTER 5

THE URBAN HIERARCHY AND REGIONAL DEVELOPMENT

The Urban Hierarchy and Diffusion of Innovations

5.1 A hierarchy permits differentiation in economic function, specialisation and division of labour (Richardson, 1972, p. 38). It also offers firms a wider choice of location and enables them to operate more efficiently. The urban hierarchy functions as a mechanism for organising production and distribution in the regions; while the national urban system enables transmission of entrepreneurial innovations and expertise from the centre to outlying areas or from the periphery to the centre. Many cities are seedbeds of innovations which, once introduced, do not diffuse instantaneously or at an even rate over the economy as a whole. The conventional explanation is that social and economic change diffuses down the hierarchy, passing to large urban centres from where wavelike diffusion occurs into surrounding regions. Both processes—spatial and hierarchical diffusion—operate simultaneously. This is aided by the fact that many businesses are themselves hierarchical with headquarters in Dublin or abroad and subsidiaries in the provinces. In the Irish context, the hierarchical spatial structure of businesses is likely to be more rigidly focused upon the capital city than in many other countries due to the absence of any other metropolitan centres. Also, the spread of innovations to peripheral regions is aided by the existence of multi-plant firms, as diffusion takes place more rapidly in an *intra-organisational* context than between plants in different organisations. However, in the case of multi-national branch plants, the pattern of linkages might be stronger with overseas centres than with Dublin. Hierarchical diffusion is also stimulated by other processes: the communications network is structured on the urban hierarchy; some technical progress is embodied in capital accumulation so that the locational pattern of

mobile capital influences the diffusion path of innovation. (Richardson, 1978, p. 129). Larger towns are more likely to adopt innovations because of the disproportionate concentration there of the stereotype early adopters (managers, scientists, R and D experts and Government advisory services) and the location there of the decision-making offices of multi-plant firms. Urbanisation economies augment these trends by attracting more of the élite population and business organisations receptive to innovation (Richardson, 1978, p. 129).

5.2 In contrast, Pred has argued that interpretations of the hierarchical diffusion of inter-urban growth transmission are founded upon rather flimsy theoretical and empirical underpinnings (Pred, 1973). The small number of empirical studies attempting to link hierarchical diffusion with the spatial spread of economic growth have centred mostly upon innovations which are artifacts of growth—such as TV ownership—rather than on growth-inducing innovations. These are of three major types: (i) new products and services for intermediate or final demand; (ii) new production processes; and (iii) new ways of performing or structuring the operations of “business organisations” (Pred, 1976, p. 153). Three features should then be combined in any model of the diffusion sub-process of urban system development and these are:—

- (i) Hierarchical diffusion;
- (ii) Lateral exchanges between similar sized towns and smaller-to-larger place dissemination; and
- (iii) Specialised information exchange between mutually interacting high-order towns, and between various urban pairs within a group comprising the largest metropolitan complex and towns in the size class just below it (Pred, 1973, pp. 33-34).

5.3 The urban centres of a region and a nation are structured in a size and functional hierarchy because no one centre can efficiently supply a complete range of goods and services to a region. This central place hierarchy reflects the underlying goods and service hierarchy; and the latter exists because there are different upper limits (*the range*) and

lower limits (the *threshold*) on the size of the market for any good or service. Central place theory, with its rigid hierarchical structure of centres and its emphasis upon supplying tertiary services to a hinterland, can only be used to explain local and regional hierarchies in rural areas.¹ The national urban hierarchy lacks the systematic order and pattern of the central place hierarchy at regional level. Towns of similar sizes may produce different mixes of goods and services and the classic hierarchical pattern is distorted by the distribution of manufacturing industries, as these are less ordered by town size than the distribution of tertiary services.

Functional Change in the Irish Urban System

5.4 It is important in the context of policy formulation to examine trends in the location of tertiary economic activities throughout the urban system. The changing retail structure of the 49 largest towns in the Midlands and Border area—ranging in size from Kilkenny (13,306) to Drumshanbo (576) has been analysed for the 1951-61 and 1961-71 periods (O'Farrell, 1978b). The results indicate that the relative changes in both the composition and the size of the retail structure of urban centres were fairly uniform—even when stratified by town size and order of function (centrality indices). The changing pattern of emigration and rising incomes of the 'sixties resulted in all four town size classes (less than 1,500; 1,500-5,000; 5,000-10,000 and greater than 10,000) recording increases in all three orders of functions classified according to their 1951 centrality values² (O'Farrell, 1978b). Unfortunately, there is no evidence on the locational pattern of public

¹For analysis of the central place system in the rural Irish context, see O'Farrell, P. N. (1969).

²The centrality of each function varies with the number of outlets of that particular function and this is related to consumer demand. Thus:

$$C_a = K(Ta)^{-1}$$

Where C_a centrality value of a particular function a ; T_a number of outlets of 'a' in the area; K total number of outlets of all kinds in the area (i.e., a constant representing total demand). High order functions included antique shops, cleaners and dyers, builders and providers, accountants, architects, photographers, fish merchants, insurance brokers etc; middle order functions included timber merchants, cinema, plumber, electrical/radio shop, house furnishers, jeweller, hairdresser (ladies), café, hotel etc; while low order functions included bank, hairdresser (men), grocer, hardware, chemist, cycle dealer, victualler, footwear shop, draper etc.

sector services (education, health, etc.). The principal reason for change has been the diffusion through the system of the eight new high order functions (including television rentals, laundrettes, motoring schools, sports outfitters) which, because they have concentrated predominantly in the larger towns (greater than 5,000 population), have served to diversify their tertiary economic base and enhanced their prospects for further growth. Little diversification of functions is likely in towns below 3,000 population (there are some exceptions), but absolute decline or disappearance of these centres is unlikely to occur—although residents living in or near to them will have to travel to purchase higher order goods and services.

5.5 The analysis of changing tertiary structure at individual town level shows that in the urban centres of the Midlands and Border area—most of which are below 6,000 population—there is considerable upward and downward mobility within the system. Towns advance and regress with respect to their retail structure and this has proved almost impossible to predict as the random decisions of retailers may have a considerable effect in small centres (O'Farrell, 1978b). There are possibilities for improvement in most places if they receive a stimulus to their economic base, as patterns of change are less stable and predictable than in the twenty largest towns in the national urban system.

5.6 The regression analyses, which attempted to model change in numbers of establishments and functions, revealed that change in urban population, change in hinterland population and distance to nearest neighbour of equivalent or greater rank, displayed significant relationships with the dependent variables (O'Farrell, 1978b). Hence, the process of change is influenced by the prevailing spatial pattern of settlements: the greater the spatial separation from the nearest neighbour of equivalent or greater status, the greater the rate of increase in the diversity of functions and establishments.

5.7 The underlying demographic and employment location trends, whether accompanied by an urbanisation policy or not, will have a major impact upon rural areas. The proportion of the labour force engaged in agriculture will continue to decline and NESC projections

suggest that the family farm labour force will fall from 252 thousand in 1975 to between 195 and 210 thousand by 1986 (NEEC, Report No. 35, p. 25). The rate of decline in aggregate rural area population will probably continue to fall and some rural areas close to expanding urban centres may record population gains, as in the East and South-East regions between 1966 and 1971. The problem in many rural areas is that decline of the farm population is taking place against a background of a slow growth rate of local employment opportunities. Curry has argued that "where this occurs the decline is a composite one, not only from farming but from the rural areas itself to larger urban centres and the economic justification for the provision of services, both commercial and social, becomes increasingly difficult in areas of dispersed settlements" (NEEC, Report No. 19, p. 8). In rural areas of population decline remote from expanding urban centres problems of the cost of provision—both to the consumer, the public agency, and private enterprise—of social, retail, transport and other services are likely to be relatively greater than in areas of expanding population (NEEC, Report No. 19, p. 19). Service provision needs to be planned with the most important criterion being the ease of access of rural dwellers (especially non-car owning households) to them. There will be a continuing need to provide a public transport system which should be based upon an examination of the opportunity costs and benefits of alternative systems. It will be necessary to identify viable service centres in rural areas from which to supply social and other services; their capacity for growth could be augmented by positive planning especially in the provision of housing.

CHAPTER 6

SPACING OF URBAN CENTRES

6.1 The location of towns and cities relative to others in the system is an important aspect of regional policy. In Ireland, it has been shown that there are systematic relationships between a number of factors and the spacing of urban centres of over 1,500 population (O'Farrell, 1970b). A regression model suggested that over two-thirds of the variation in the dependent variable-log of the distance between a specific centre and its nearest neighbour of equal or larger population size—may be accounted for by three variables: population size of centre, income density and distance from the nearest city (Dublin or Cork). Of these variables, size of centre is the most important, accounting for half of the total variation. The positive relationship between the independent variable, distance from the nearest city, and the dependent (distance to nearest neighbour of equal or higher order) reflects the fact that towns of given sizes around Dublin and Cork are "too close" to these cities thus enabling them to be accessible to metropolitan external economies (O'Farrell, 1970b, page 289). Consequently, the spatial distribution of urban centres in Ireland reflects—to some degree—an ordered adjustment to the distance factor. In the context of policy, this is similar to the Alonso argument in favour of "small and near and big and far" (Alonso, 1971b). However, the national urban hierarchy and the spatial distribution of towns in the economy are *two distinct concepts* which are not necessarily in harmony. The size hierarchy may be judged efficient in terms of the criterion of population distribution among existing centres but may be highly sub-optimal because of irregular spacing, i.e., all the major towns may be located in one or two developed regions. It is important to ask whether the existing size and spatial distribution of urban centres in Ireland needs to be changed. If the economy has adapted to

this form of spatial organisation, this, *almost by definition*, means that a reorganisation would be costly and hence not optimal—not from a short-term point of view, and probably also not from a long-term perspective (Von Boverter, 1971, p. 332). There remains the problem of the size and growth rate of Dublin relative to the rest of the Irish urban system.

6.2 Sustained economic growth and the maximisation of individual satisfaction of the inhabitants of a country are compatible with fairly wide differences in the degree of spatial concentration of the population and its economic activities. This cannot be proved precisely but there is evidence that different countries at the same stage of economic development exhibit extreme differences in spatial layout but have similar economic growth rates. For example, both France, with a large capital and then no cities in the population range 1–8 million, and West Germany, which has a number of regional capitals but no primate city, have satisfactory growth rates and have adapted to their contrasting spatial organisations. It would be difficult to argue that one or the other type of spatial organisation is better—apart from the problem of the absolute size of the Paris region—and, furthermore, there is no way of verifying that some intermediate situation between the French and West German model would be preferable (Von Boverter, 1971, p. 333). This poses the question as to whether alternative settlement patterns affect welfare in any regular and discernible way? If so, does the settlement pattern itself yield efficient means of attaining welfare ends? Many of the welfare considerations are probably more closely associated with density and/or the spatial structure of towns rather than their absolute size (see paragraphs 4.3 and 4.4). The settlement pattern is a difficult concept to reduce to specific relevant variables (McCullum, 1973). Our knowledge is deficient in terms of identifying the most appropriate hierarchical distribution for the efficient diffusion of innovations. There are no adequate criteria for judging whether one type of hierarchy is superior to another. There may be some sense in trying to identify ranges of town sizes between a minimum threshold and a scale at which further size increases are not accompanied by additional net economies. Yet, even if it were practically possible to identify such a range (and this is unlikely) it may vary substantially according to the *spatial distribution*

and *structure* of the urban areas. There is a need for more research, not on city size in isolation, but on investigating the relationship between size of towns and spatial structure and of the efficiency of alternative settlement patterns.

6.3 With increased urbanisation and regional development, location relative to the range of external economies available in metropolitan areas becomes more important. A smaller centre close to Dublin profits from greater external economies and from overspill effects (the greater the distance from Dublin the larger a centre has to be in order to attract labour and capital) so that the minimum size for successful growth depends *partly* upon a town's location relative to other major centres. The greater the inter-urban (and inter-regional) connections of such a town, the better are its growth prospects for a given initial size. The minimum size of urban centre might be conceived as a function of: (i) the distance from Dublin; (ii) a correction factor for low population density and degree of urbanisation and (iii) the degree of inter-regional integration of the town (Von Boverter, 1973). If the regional centre generates the bulk of its linkages with urban areas abroad, then the regional centre must be larger, while in a more central location with strong inter-urban and inter-regional connections, the regional centre could be smaller. At present, little is known in quantitative terms about such matters. While many external economies available in a city such as Dublin may be critical to the functioning of an economic enterprise, it is not easy to measure the degree of importance of each economy. Knowledge of how distant from an external economy enterprises may locate and not suffer a reduction in efficiency is also deficient. Different external economies—a skilled labour pool, business consultants, computer bureaux and so on—will have varying degrees of spatial influence and some may have a spatial range smaller than the radius of the city. The extent to which firms will utilise and derive benefits from external economies will vary greatly between firms. Given the existing spatial structure of the urban system and the absence of any proposals for *new* towns, the only focus of policy is in possible size changes of existing towns. Although there are regularities in the size and spatial distribution of towns, there is a need for explicit policy decisions concerning the desirable direction of changes in size and spatial distributions at national and regional level.

activities—in particular offices—from the central business district to inner suburban areas, especially Ballsbridge. There has also been substantial population growth in satellite settlements within commuting range of Dublin and Cork where activities are accessible to the range of urbanisation economies in the cities.

Location Patterns of New Industry Projects, 1960-1973

7.2 The locational pattern of industrial plants¹ established under the New Industries Programme of the IDA has been analysed with respect to regional, Designated Area/Non-Designated Area (DA/NDA) and town size location (O'Farrell, 1978a). The detailed results of the hypotheses testing are outlined in the Appendix. These indicate that at regional level four of the eight factors tested—plant size, percentage females on the payroll, market orientation and the fixed assets to labour ratio (a proxy for capital intensity) are not significantly related to the regional location of plants in towns above or below 25,000 population. These findings imply that any increase or decrease in the size distribution of plants being established under the New Industries Programme will not affect detrimentally the inflow of projects to any region. Also, the size of the country is such that the market orientation of plants—whether selling domestically or abroad—has not influenced their regional location. Furthermore, for plants in towns above 25,000 population (that is, in regions East, South-East, South-West, Mid-West and West) none of the variables tested is related to regional location. This implies that, in the context of the factors specified, plants—once they have decided to locate in centres above 25,000 location—are relatively indifferent as to their regional location. In addition, manufacturing group, capital grants as a percentage of fixed assets,² organisational type (non-Irish plants) and nationality (UK market orientation only) are each related to the regional location patterns of plants in towns below

¹This is defined as an establishment which has received a grant payment (capital grant for sites and buildings or machinery and equipment, training or other IDA grant) at any date between January 1st 1960 and June 30th 1973. The terms establishment, plant and project, which are used interchangeably, may refer to one of a number owned by a particular firm but are classified separately if they have a distinct premises and workforce at a specific location.

²The percentage grants variable is not expected to display a strong relationship with location patterns at *regional* level as many regions in the DAs (within which there is a constant grant maximum) straddle the DA/NDA boundary.

CHAPTER 7

LOCATIONAL PROCESSES

Introduction

7.1 Economic growth—even in the Irish context—is becoming increasingly urbanised, partly due to changes in the sectoral composition of national growth. Major elements in national employment growth, in addition to manufacturing, have been service industries. During the last decade national economic growth has been associated—as a consequence of industrial development policies—with a relative dispersion of manufacturing employment into the regions and away from the Dublin conurbation, while service-type employment has continued to concentrate in Dublin. Within the regions, on the other hand, sustained growth has been associated both with a degree of concentration of activities into the larger urban centres and dispersion throughout the hierarchy. Between 1960 and 1973, of the 39,218 jobs created outside Dublin under the IDA's New Industries Programme, 34% were in the 15 towns of the 10,000–150,000 category; 21% were located in the 4 towns—Cork, Limerick, Waterford and Galway—in the 25,000–150,000 category; and 16% of the jobs were generated in the 75 settlements which attracted projects in the below 1,500 population category (O'Farrell, 1975, p. 28). The country's five largest towns, including Dublin, attracted 31% of all jobs. The pattern of projects assisted under the Small Industries Programme, which has generated over 11,000 jobs, is likely to have been more dispersed through the urban hierarchy—although no systematic analysis of their distribution has been conducted. Conversely, new office employment has probably been far more concentrated at the upper end of the national urban hierarchy than the grant-aided industrial projects. Within one metropolitan centre—Dublin—economic growth has been accompanied by decentralisation of

25,000. However, all four variables are only weakly associated with regional location (although the influence of percentage grants has helped to increase the chances of peripheral regions attracting investment) which suggests that, with respect to the factors tested, establishments display a relatively high degree of randomness in choosing a regional location. This relative randomness in regional location behaviour in towns above and below 25,000 population is a consequence of the IDA both varying grant levels and the arrangements of itineraries for potential investors.

7.3 The analysis of industrial location patterns at DA/NDA level—where a statistical control for the town size group effect is required—shows that six of the eight factors are not related to DA/NDA location. It is apparent that the only substantial relationship is that between percentage grants and DA/NDA location which suggests that the differential grant system operated by the IDA and favouring DA has been the single most important factor influencing the pattern of location as between DA and NDA. Assuming that percentage grants is a causal variable—and this seems very plausible at DA/NDA level—the results indicate that the spatially tiered grants scheme has the ability to influence locational behaviour within Ireland. The current system as administered by the IDA is completely flexible within specified legal limits in that each project is treated separately and the incentive package may vary for that project as between different locations in the country depending upon the social and economic circumstances of the location. It is clear that, in the context of the factors analysed, there is one fairly strong relationship at DA/NDA level (Kendall's tau values for town size groups ranging from -0.32 to -0.50) compared with four significant but weak relationships in towns below 25,000 at regional level (the largest Goodman and Kruskal tau value is 0.06).

7.4 The analysis at town size group level (where a DA/NDA control is required) shows that there are more significant relationships with town size location in DA than in NDA. With the exception of manufacturing group (plants classified into seven groups, see O'Farrell, 1978a) there are no significant relationships between any of the hypothesised factors and town size location in NDA. It may be inferred from this past behaviour that, apart from the influence of manufacturing group,

changes in the characteristics of plants will not affect the probability of various town size groups attracting new industry projects in NDA. Four factors are significantly related to town size group location in DA: establishment size, manufacturing group, percentage grants and organisational type (non-Irish branch plants, in comparison with independents, reveal a marked preference for larger towns). However, even within DA, these town size group relationships are relatively weak, which provides the IDA with the scope to influence location patterns—although not to the same degree as between town size groups in NDA. Also, there is evidence to show that closure rates of grant-aided plants in smaller towns are not significantly higher than in the major urban centres (O'Farrell, 1976).

7.5 When regional and town size location patterns are examined simultaneously, it is of considerable interest to test whether locational differentiation is greater by town size or by region in the Irish context (Table 6). The mean number of plants per town rises from 0.28 (below 1,500) to a maximum of 37 (Dublin) (Table 6). Application of a Two-Way Analysis of Variance to a table of number of industrial establishments per town, cross-classified by town size group and region, yielded two contrasting results (see Appendix). First, the number of plants per town by town size group is independent of region, i.e., when town size is controlled the between regions effect upon number of plants per town is not significant. This is an extremely important finding for it suggests that the probability of a town of a specific size group attracting a new industry project does not vary regionally. Second, a substantial relationship exists between town size group and the number of plants per town. Although towns throughout the urban hierarchy have attracted investment and 25.1% of new projects have located in towns below 1,500 population, the analysis clearly demonstrates the not unexpected finding that degree of locational preference displayed by new industry plants varies positively with town size (O'Farrell, 1975, p. 31). Locational discrimination by investors in Ireland appears to be much greater with respect to town size than region and this is partly a consequence of the IDA's regionally differentiated incentives scheme which has played a part in eliminating inter-regional differences in perceived locational attractiveness by investors.

TABLE 6
Number of Grant-Aided Manufacturing Establishments per Town Classified by
Town Size Group and by Region

Town Size Group	Region								
	Donegal & N.W.	West	Mid- West	South- West	South- East	East	North- East	Mean	
1,500 <	0.45	0.31	0.14	0.33	0.23	0.16	0.60	0.10	0.28
1,500- 5,000	1.40	1.25	1.33 ¹	2.43	0.33	0.80	2.17	1.67	1.45
5,000- 10,000	3.00	2.00	1.00	3.00	1.25	4.25	3.00	1.33	2.36
10,000- 25,000	5.00	—	10.00*	4.00	2.00	2.00*	5.50	4.00*	4.40
25,000- 150,000	—	16.00*	7.00*	11.00*	18.00*	—	—	—	13.00
>150,000	—	—	—	—	—	37.00*	—	—	37.00
Mean	0.67	0.83	0.57	0.93	0.70	1.11	1.12	0.52	0.82

¹Shannon plants (23) excluded. If included, value rises to 1.78.
*Figure based upon one town only.

Friedmann Two Way A of V: chi-squared = 12.86, d.f. = 7; N.S. Test run on rows 1-3
x 8 cols. (n = 262). Test re-run (pooling West & Mid+West)
on rows 1-4 x 7 cols: chi-squared = 11.84, d.f. = 6; N.S.

Source: O'Farrell, P. N. (1978a), *An Analysis of New Industry Location: the Irish
Case*, Progress in Planning, Pergamon Press, Oxford.

7.6 These results might appear to contradict the findings reported earlier which showed that four independent variables are related to town size group location in DA and only one in NDA. Plants do discriminate by town size group and this differentiation is weakly related to size of establishment, manufacturing group, percentage grants and organisational type (non-Irish) in DA but only to manufacturing group in NDA. Most plants (of all characteristics) display locational preferences which are positively related to town size.

7.7 Similarly, at DA/NDA level, the between Areas effect in number

of plants per town is not significant whereas the between Town Size group effect is highly significant (see Appendix). It is reasonable to infer that the insignificant between Areas effect is largely a consequence of the more generous incentives available to investors in DA. In general, it is apparent that the probability of a town of specific size group attracting new industry does not vary as between DA and NDA in Ireland: but that the probabilities do vary substantially by town size. It has been shown elsewhere that a town in the 25,000-150,000 category has forty-five times as great a probability of attracting a new industry project as a village in the below 1,500 group, seven times as great a probability as a town in the 1,500-5,000 group and five times the probability of a town in the 5,000-10,000 category (O'Farrell, 1975, p. 31). It is clear that the presence of a major urban centre in a region was a significant advantage in attracting substantial manufacturing employment growth to the region in the 1960-1973 period. The size range at which this occurs appears to be around 20,000-25,000 although it is not possible to be definitive due to the small number of towns (6) which exceed 20,000 outside the Dublin-Dun Laoghaire area. Population size *per se* is not in many cases the *proximate* causal variable: the existence of a skilled labour supply, the frequency of freight transport services, the quality of the communications systems—telephones, telex, roads, airport accessibility and other external economies—may be broadly associated—not necessarily causally—with town size. Also it should be emphasised that the IDA has succeeded in locating new industry projects throughout the urban hierarchy (25.1% of new industry projects have located in towns below 1,500 population) and have combined elements of dispersion with a degree of concentration in most regions.

7.8 The results indicate that there are varying degrees of foot-looseness displayed by both indigenous plants within, and foreign projects upon moving into, the Irish economy. In general, it is clear that plants are considerably more foot-loose with respect to regional location than they are with respect to town size. The geographical location of an urban centre of specific size within the country, however peripheral, will not influence the attractiveness of that centre for industrial investment, assuming a continuation of DA/NDA/Dublin area

grant differentials.³ The capital grants incentives policy and the organisation of itineraries by the IDA have both tended towards the equalisation of the relative attractiveness of different regions.

7.9 Towns in the 25,000–150,000 category attracted an average of 13 projects each between 1960 and 1973 with a mean employment of 190 per plant as compared with towns in the 10,000–25,000 category which attracted an average of 4.4 projects per town with a mean payroll of 140 employees. Hence, the larger town gained approximately 1,900 manufacturing jobs more than a town in the 10,000–25,000 category and, assuming a multiplier of 1.3, probably created 2,500 extra jobs over the 1960–1973 period.⁴ However, the locational pattern which evolved between 1960–1973 indicates that 5 towns in the 5,000–10,000 category would attract, if past locational trends are maintained, approximately the same number of projects as one town in the 25,000–150,000 group. Similarly, 3 towns in the 10,000–25,000 category would attract as many plants as a major urban centre of between 25,000–150,000 population (Table 6).

7.10 The discussion in paragraphs 7.2–7.9 and the results presented in Table A1 to A6 and Table 6 have been concerned with analysing new industry location patterns from the perspective of the locational decision-maker. It is important to improve our understanding of the

³For acceptable new industry projects where the investment does not exceed £1 million, or the investment per job is not over £15,000, non-repayable cash grants may be negotiated up to a maximum of 50% of eligible costs in Designated Areas and 35% of eligible costs in Non-Designated Areas. For other projects grants are determined on a cost per job basis. Details of the complete range of IDA incentives and services are available elsewhere (See *Industrial Development Authority, Annual Report 1977, Appendix A, p. 95*). In the period prior to the recession, the IDA grant-aided manufacturing industries in Dublin only if they were expansions of existing enterprises in Dublin or new enterprises for which an alternative location was not feasible. Since the disproportionately large effects of the recession upon manufacturing employment in Dublin, the IDA has reviewed its strategy. During the 1977–1980 period the IDA will actively promote the development of Dublin and the entire East region (*IDA Industrial Plans, 1977–80, pp. 59–60*).

⁴The GNP income multiplier has a value of 1.3 for 1968; however, multipliers do vary depending upon the sector in which the income injection occurs (Copeland and Henry, 1975, p. 11). There is no comparable evidence with reference to employment multipliers.

factors underlying locational distribution in order that policy instruments to influence future locational decisions can be used even more effectively. However, it is possibly even more important to examine the *consequences* of the numerous location decisions made throughout the country for job provision. In Table 7 the actual number of jobs created between 1960 and 1973 within specific town size groups is expressed per 1,000 urban population. As urban populations and populations of hinterlands are highly correlated,⁵ the results may be interpreted as a broad index of job creation performance with respect to the total population within journey-to-work areas. On the basis of this criterion, towns within the 1,500–5,000 group have benefited most from the New Industry job creation programme between 1960 and 1973 with 59.3 jobs per 1,000 urban population (Table 7). The 5,000–10,000 size category gained 47.2 jobs per 1,000 urban population and the ratio then falls to approximately 32 per 1,000 urban population for both the 10,000–25,000 and 25,000–150,000 categories which is approximately the same level as for the below 1,500 group. The one striking anomaly is the very low level of jobs created per 1,000 urban population (7.2) in Dublin. This partly reflects IDA policy in the pre-1973 period which was to divert as much new manufacturing investment as possible away from Dublin and into the regions. Hence, when assessed by the criterion of number of jobs created per 1,000 urban population, policy has been most successful throughout the 73 small 1,500–5,000 towns with the 24 centres in the 5,000–10,000 category also benefiting from a high level of job creation. It is important to note that manufacturing employment creation per 1,000 urban population has been as high in the small towns and villages below 1,500 population as in the major regional growth centres of Cork, Waterford, Limerick and Galway.

Manufacturing Employment: Recent Trends and Future Prospects
7.11 The East region has had a lower rate of manufacturing employment growth than the State since the early 'sixties and this was consistent with regional policy. Between 1961 and 1966 manufacturing employment in the East increased by 6.9% compared

⁵There is a coefficient of determination of $r^2 = 0.90$ between the population of an urban centre and the external population served within its median hinterland in County Tipperary (see O'Farrell, 1969, p. 107).

TABLE 7
Total Urban Population and Number of New Industry Grant-Aided Establishments per 1,000 Urban Population by Town Size Group 1960-1973

Town ¹ Size	Total Urban Population	Number of Establishments per 1,000 Urban Population	Total Employment ² Created per 1,000 Population 1960-1973
Less than 1,500	197,557	0.53	32.7
1,500-5,000	205,550	0.64	59.3
5,000-10,000	152,243	0.34	47.2
10,000-25,000	159,211	0.26	31.8
25,000-150,000	260,483	0.20	31.9
Greater than 150,000 (Dublin)	778,127	0.05	7.2

¹The less than 1,500 group includes all towns as defined by the Census, i.e. all those with at least 50 inhabited houses.
²Actual jobs from IDA Employment Survey, January 1973.
Source: O'Farrell, P. N. (1975, p. 31).

with a 10.6% growth at national level; the corresponding figures for the 1966-1971 period were 3.9% and 7.6%. The effect of the 1974-76 recession and the onset of free trade was to substantially exacerbate these trends. Between 1973-1977 there was a net increase of 1,900 jobs nationally in manufacturing industry, but substantial losses occurred in the traditional industrial areas of the East and North-East. These two areas combined recorded a net decline of 12,050 jobs (11,050 being in the East region) while all other regions displayed a net increase which amounted to 13,950 jobs (Table 8). The gross target established for the *IDA Regional Industrial Plan 1973-1977*, was exceeded nationally and substantial progress in new job creation was made in the West, South-East and Midlands which recorded the largest net gains in manufacturing employment between 1973 and 1977.

7.12 Job losses were higher than expected in all regions between 1973 and 1977 but there was a marked concentration of these losses in the East (25,650) and North-East (5,500) regions resulting from the effects of the recession and the phased introduction of free trade upon the traditional industry in these areas (Table 8). Within the East region (where manufacturing employment fell by 12% (11,050 jobs) between 1973 and the end of 1977) the decline has been concentrated in the Dublin county area which recorded a net decrease of 16% (12,750 jobs) in manufacturing employment between 1973 and the end of 1977 (*IDA Annual Report, 1977*, p. 40). Hence, in the rest of the East region outside County Dublin, a net increase in the manufacturing workforce of 1,700 was achieved.

7.13 The IDA plans to create 47,000 grant-aided manufacturing jobs nationally between 1977 and 1980 and, as other manufacturing employment is expected to decrease by 7,000, the number employed in the manufacturing sector is projected to rise by 40,000 (*IDA Industrial Plans 1977-80*, p. 41). The gross job creation target outside the East region is 33,500 which it is estimated will yield a net increase of 29,500 jobs. The gross manufacturing job target for the East region during the 1977-80 period is 13,500 jobs and, as the IDA forecast that employment in other manufacturing will decrease by 3,000, net manufacturing employment is expected to increase by 10,500.⁶ (*IDA*

⁶It is expected that an additional 1,500 jobs will be generated in the region through the IDA Service Industry Programme (*IDA Industrial Plans 1977-80*, p. 59).

Industrial Plans 1977-80, p. 59). If this net job creation target is achieved, the level of manufacturing employment in the region by 1980 will be 550 below the 1973 level. The major thrust of the IDA's promotional effort in the region will be centred upon County Dublin where it is planned to create 9,500 jobs during the 1977-1980 period. If it is assumed that employment decline in other manufacturing in County Dublin will be approximately proportional to the size of its industrial base, then 2,500 of the 3,000 decrease in the East region will occur in County Dublin. Consequently if the net manufacturing employment increase of 7,000 in County Dublin between 1977 and 1980 is realised, the level of manufacturing employment in the County in 1980 will be 5,750 below the 1973 level. Hence, although the IDA are more actively promoting Dublin than at any time in the past, the level of job losses was so severe during the recession that the job creation targets for the 1977-80 period for both the East region and County Dublin will make no contribution towards job requirements arising from the natural increase in the population.

7.14 Two marked and contrasting disparities in regional employment change have emerged during the past decade and one of them, in the manufacturing sector, has been accentuated by both the gradual introduction of free trade and the recession. Service employment has continued to concentrate and expand more rapidly in Dublin and the East while, simultaneously, the same area has recorded the greatest net decline in manufacturing employment. Most industrial workers made redundant in Dublin do not possess the skills to be absorbed into the service sector while there are insufficient service-type jobs in other regions to absorb the demand for this type of work from school and college leavers.

TABLE 8
Manufacturing Industry Employment Change, 1973-1977

Region	Gross Gains 1973-1977	Gross Target 1973-1977	Gross Losses 1973-1977	Net Change 1973-1977
State	57,500	55,000	55,600	1,900
Rest of State	38,400	32,700	24,450	13,950
North-East	4,500	5,300	5,500	- 1,000
East	14,600	17,000	25,650	- 11,050

Source: *Industrial Development Authority, Annual Report 1977*, p. 23.

produce income and employment multipliers in other regions and possibly in places where they may not be desired. At present there is no research evidence concerning inter-urban growth transmissions upon which policy decisions could be based.

Growth Centre Strategies

8.2 Growth centre strategies are an important instrument of regional policy in many countries, but despite an extensive literature the concept remains confused. Hence, before discussing the utility of this policy instrument in the Irish context, it is important to define growth poles and growth centres. Perroux defined a growth pole (*pôle de croissance*) as a set of industries in abstract economic space which are capable of generating dynamic growth via input-output linkages with a propulsive industry (*industrie motrice*).² French economists, in particular Boudeville, translated the growth pole idea into a growth centre in geographical space by envisaging a growth pole as "a set of expanding industries located in an urban area and inducing further development of economic activity throughout its zone of influence" (Boudeville, 1966, page 11). Hence, Boudeville introduced the notions that Perroux's linked industries might be spatially clustered in an urban area and that substantial spread effects would occur within the surrounding hinterland. An alternative and frequently used definition of a growth centre is to abandon the key element of inter-linked industries and to conceive a "growth-centre" as a geographical clustering of economic activities in an urban area. This is, implicitly or explicitly, the usual definition of a growth centre employed in the Irish context. It leads to the direct policy implication that some spatial concentration of economic activities is both more efficient and more conducive to growth than dispersal (Richardson, 1978, page 165).

8.3 The growth centre debate has often been needlessly polarised in Ireland into a simple concentration versus dispersion issue. However, it has been argued that this serves grossly to oversimplify the problem (O'Farrell, 1974). Conceptually, it seems more realistic to conceive of a continuum of strategy options ranging from total concentration at one

²This industry and its linked activities are characterised by high growth rates, rapid technological innovation, high income elasticities of demand for their outputs and substantial multiplier effects throughout the economy.

CHAPTER 8

INTER-URBAN LINKAGES AND GROWTH CENTRES

Inter-Urban Linkages

8.1 The essence of the concept of the urban system is that towns are integrated as a consequence of the strong linkages between them for goods and service purchases. The degree to which this integration exists delimits the potential importance of, and to a certain extent defines the strength of supporting arguments for, national urban strategies. The external interdependence of the national urban system has increased through growth of international trade and the location of multi-national branch plants. There are frequently erroneous assumptions made concerning the paths of inter-urban growth transmissions that occur in economically advanced systems of towns. No regional policy in Ireland is likely to be totally successful unless its implementation is based upon research designed to establish the nature of growth transmission linkages between towns. As a consequence of the scale of inter-regional (and foreign trade) multiplier effects that normally follow from any major industrial investment, it is desirable that there be some co-ordination both of the explicit and *implicit* locational decision-making of private enterprises, semi-State bodies and Government departments.¹ The achievement of regional development goals implies that attempts are made to influence the inter-urban linkages that arise as a result of goods and service purchases, subcontract awards, and miscellaneous capital allocations (Pred, 1976, page 169). Unless the major paths of inter-urban growth linkages in the Irish economy are identified, and possibly altered, investments made by private and public sector enterprises are likely to

¹Implicit location decisions are those made by a business or Government unit when it decides to award a contract or sub-contract, to purchase components, goods and services or to make an allocation of capital (see Pred, 1977, pages 23-24).

end of the scale (for example, this might be achieved by a decision to concentrate investment in Dublin or Cork) to extreme dispersal at the other (for example, the implementation of a policy to create industrial growth in every community of greater than 200 people). Between these two end points of the concentration-dispersal continuum lie an almost infinite variety of alternative strategies including any distillation of "concentration" or "dispersal" which, at a given point in time, is in harmony with the social and economic goals of the community (O'Farrell, 1974, p. 500). Furthermore, it is not unrealistic to envisage a wide range of spatial investment strategies which incorporate features from the "concentration" end of the continuum together with elements of "dispersal" (*IDA, Regional Industrial Plans, 1973-1977, Part 1, pp. 47-48*). For example, a policy of some concentration of resources upon Dublin in the East might be combined with one to disperse growth to places in the population range 1,500-10,000 in the Designated Areas by appropriate injections of infrastructural investment and by industrial incentives schemes differentiated by both region and town size. The general proposition is that to consider the policy options in terms of a simple dispersion or growth centre alternative polarises the debate and forces various public and private interest groups to take up unnecessarily defensive positions and to overstate their reasons for advocating a particular strategy. An infinite blend of concentration-dispersal possibilities exists which can be traded off against each other and the appropriate policy for one region may not necessarily be appropriate for another or for the nation (O'Farrell, 1974, p. 501). The advantage of the "continuum" concept is that it permits a high degree of flexibility, which is so important when planning a regional system the growth processes of which are only partly understood, and where many locational decisions are not under the control of the State.

8.4 The case for a degree of spatially concentrated growth in developing regions rests primarily, but not exclusively, upon the following arguments: (i) the need to build up external economies in the region which will enable firms to improve operating efficiency and enhance the prospects for further growth; (ii) the presence of a growth centre in a peripheral region will accelerate the inflow of manufacturing investment; (iii) the marginal cost of providing infrastructural investment to support productive activity is lower in a growth centre

than in small scattered locations; (iv) there are marked indivisibilities in the provision of many public and private facilities and many are unlikely to locate in a region unless there is a major urban centre; (v) growth centres function as a centre for receiving innovations and diffusing them to the regions; (vi) the need to develop a counter-magnet to the excessive concentration of population and economic activities in Dublin.

8.5 One additional assumption of growth centre strategy is that a "spread" effect occurs inducing higher levels of development over an extensive contiguous area around the centre. People subscribing to this view make the *de facto* assumption that the inter-urban transmission of growth is largely confined to the flow of multiplier effects from towns of a particular size to smaller nearby centres. This reflects the proposition that a growth pole "is an urban centre of economic activity which can achieve self-sustaining growth so that growth is diffused outwards into the pole region" (Nichols, 1969, p. 193). Berry has stated that "growth impulses ... trickle down to smaller places and ultimately infuse dynamism into even the most traditional bound peripheries" (Berry, 1969, p. 288). The extremely unrealistic nature of this assumption—that a given centre and its zone of influence constitute a more or less closed system—is contrary to a volume of empirical evidence which has demonstrated that many of the most important goods and service linkages occur with non-local units (Pred, 1976, p. 152). Cameron, writing in 1970, was also sceptical, alleging that "there are uncertainties relating to the impact of a growth centre strategy upon areas within the region which have not been chosen for prime investment ... and hence there are legitimate grounds for assuming that complementary policies for the development of the economic base of secondary centres are absolutely necessary, if labour and capital under-utilisation is to be prevented" (Cameron, 1970a, p. 58). More recently, Pred has severely criticised planners and academics who "contend that any significant investment or expansion of economic activity at a growth centre ... will lead to a concentration of spread effects within the target centre itself and its trading hinterland" (Pred, 1976, p. 152). For significant spatial spillover effects to be generated, prerequisites may include a highly developed infrastructure, provision of centrally supplied public and social services, a demand for

labour, raw materials and components from the centre's hinterland, and the diffusion of a growth psychology from the city into the rural areas (Richardson, 1978, p. 165).

8.6 The failure of growth centres to achieve anticipated spread effects over their hinterlands has led planners and policy makers in many countries to become disenchanted with growth centre strategies. Richardson has cautioned that much of this disillusionment may be attributed to mistaken views about the length of time over which these spread effects might be created (Richardson, 1978, pp. 168-169). Most spread mechanisms—the relocation of manufacturing plants, the movement of population into surrounding towns and the spread of innovation and growth attitudes—take place over decades rather than a few years: a 15-25 year time horizon is probably appropriate (Richardson, 1978, pp. 169-171). However, spectacular results are unlikely beyond the journey-to-work zone of the growth centre as the fundamental relationship between regional growth and modern growth centre concepts—as viewed by Pred and others—is that it is the linkages within and between urban centres in the system, and not relationships between growth centre and hinterland which are key processes underlying the spatial structure of the economy. In the Irish context, the extra-regional (and extra-national) interdependence of the major growth nodes such as Dublin-Cork, Limerick-Shannon, Waterford and Galway is likely to be considerable. The growing complexity of inter-urban relationships and multipliers is largely synonymous with the mounting variety of intermediate goods and services required by technologically advanced production processes. The future growth of urban centres (and regions) in Ireland is inextricably tied to the future form and spatial linkages of private and public firms in addition to the locational pattern of new grant-aided plants which will themselves generate growth. This author is currently conducting research which is concerned with analysing the linkage patterns of grant-aided manufacturing establishments, and this will provide partial evidence of the extent of inter-urban transmission and of growth generated in areas adjacent to urban centres in the Irish economy.

8.7 Although substantial spread effects are unlikely to occur beyond

the journey-to-work zone of the growth centre, the major arguments favouring some degree of spatially polarised growth in the regions outlined briefly³ in paragraph 8.4 are convincing ones. In the Irish context, three types of growth centre may be relevant in order to satisfy different policy objectives:—

- (i) The identification of viable service centres in rural areas in which the key criteria are service costs and efficiency of supply.
- (ii) The selection of larger growth centres in the regions. This should be based upon considerations of size and of spacing from other larger centres such that the towns chosen can generate external economies for stimulating economic growth and attracting investment.
- (iii) One or two larger cities might be chosen in order to pursue a counter-magnet strategy to Dublin, incorporating the expansion of both office and manufacturing employment in these places. Such a policy reflects the assumption that large size and the "protection" of distance is a necessary precondition for competing with a highly dominant national capital.

While a regional growth centre strategy (ii) may initiate convergence in regional *per capita* income relativities by raising the overall growth rate of the selected regions, it is probable that *intra-regional per capita* inequalities will increase through the concentration of development in certain more favourable parts of a region—assuming no substantial spread effect (O'Farrell, 1971).

8.8 The policy instruments to stimulate selective growth centres will constitute a mix of grants and aids to private firms together with social infrastructure (health, education and housing) and industrial infrastructure (industrial estates, advance factories, power supplies etc.) provision. Investment incentives need not be at a higher level than those available at other locations as there is a positive relationship between town size and number of projects per town (see paragraph 7.5) and since the infrastructural benefits of the centre are synonymous with a direct subsidy. The major political difficulty with growth centre

³For a more comprehensive discussion of these arguments, see Cameron (1970b) and O'Farrell (1971).

strategies is that designation of certain towns implies preferential treatment for some urban regions and exclusion of others (the hostile reaction which greeted Buchanan's recommendation that there should be two national growth centres besides Dublin and six regional centres bears witness to the political problems inherent in designating specific towns). Growth centres in the Irish context must be incorporated within a national urban strategy which takes a comprehensive view of the future distribution of population and resources throughout the complete urban system. There are polarisation trends in the Irish economy—particularly strong with respect to service employment but also present to a much lesser degree in the manufacturing sector—which suggests that the only realistic means of challenging the increasing concentration of population in the Greater Dublin area is to stimulate more rapid polarisation elsewhere, possibly in one or two counter-magnet cities.

CHAPTER 9

URBANISATION AND SERVICE EMPLOYMENT

9.1 The distinction between the service sector and other sectors is essentially an arbitrary one. They are all interrelated and interdependent. Thus repair and maintenance, warehousing and storage, distribution, freight transport, banking and some public sector services (e.g. IDA Regional offices) are all service industries in part directly related to and interdependent with the industries they serve. Growth of such service industries, which may be induced by an expansion of manufacturing industries, does not necessarily occur in the same locations or regions. However, it is also important to recognise that much of the growth of manufacturing industry in recent times has resulted from, rather than created, service industries. The expansion of output in manufacturing industry has been facilitated by the scientific and technological advances made in universities; by the institutions of the capital market; by progress in education, training and health; and by improvements in transportation, sales and marketing techniques. Therefore, the heterogeneous service sector not only expands in response to demand from the primary and secondary sectors, but it also induces growth in these sectors.

9.2 There is obviously an important relationship between the process of employment growth in services and its impact upon the Irish urban system—particularly as the future growth of service-type employment is likely to be concentrated towards the upper end of the national urban size distribution. Hence, any discussion of the urban dimension in Irish regional development must incorporate an appraisal of the role of service employment and its potential spatial mobility, together with a brief discussion concerning the range of policy alternatives available to stimulate service employment growth in the regions. A review of

service employment is constrained to some extent by the conceptual, definitional and measurement problems inherent in analysing such a highly heterogeneous sector. These issues have been discussed in an earlier NESC Report¹ which identified service-type employment as the service sector plus occupations in the agricultural and industrial sectors which are not directly concerned with production.²

9.3 Many service-type jobs are fixed in location by the nature of the final demand for their work and cannot be relocated to other regions: for example, schoolteachers, shopkeepers and assistants, nursing staff, general practitioners, veterinary surgeons and the majority of the religious professions (NESC, Report No. 28, p. 42). In addition, there are other white collar workers who, although not confined to a fixed location by the nature of final demand, are tied by their integration into the labour force of a specific enterprise. For example, most salaried employees of a manufacturing plant—ranging from the plant manager to the stores clerk—are not potentially mobile independently of moving the whole plant. However, larger multi-plant firms frequently establish a head office in Dublin to perform marketing, major purchasing and other strategic functions. Of the total employment increase outside agriculture between 1961 and 1971, over 50% of it occurred in service-type employment, of which about one-third was in industrial services (NESC, Report No. 28, p.8). Furthermore, industrial services in 1971 accounted for 30% of employment within manufacturing industry (NESC, Report No. 28, p. 8). However, it is salient to re-emphasise that new industrial employment—largely as a consequence of IDA policies—has probably been more widely dispersed throughout both the regions and the urban hierarchy than white collar employment outside manufacturing industry (O'Farrell, 1975). This process has

¹For a detailed discussion of the complexities of definitions and terminology see, NESC, Report No. 28, Sections 1.1 and 1.4.

²Transport, Clerical, Commercial, Financial, Service, Professional and other occupations (NESC, Report No. 28, p. 20). *White Collar* employment is defined as those engaged in Administrative, Managerial, Technical, Clerical, Sales and Professional work; and within white collar occupations, the term *office workers* refers to those engaged in the use of information who require a place of work conventionally described as an office building and includes the salaried employees in the industrial sector and much of the white collar employment in the service sector (NESC, Report No. 28, p. 20).

been a major element in the introduction of new service-type jobs into the smaller towns and villages outside the East region during the past decade, largely as a by-product of the industrial development strategy. Activities such as insurance, banking, finance and the head offices of building societies, with their high demand for managerial and professional manpower, their need for information sources, face-to-face contact and specialised business services tend to locate in large cities, and, in the Irish context, this has resulted in a very marked concentration in the Dublin area. Of the total 334,157 white collar jobs in 1971, 49% were in the East region; while of the 59,664 additional white collar jobs created between 1961 and 1971, 59.6% were located in the East region (NESC, Report No. 28, p. 59). This relative concentration is greater than in many other countries,³ partly due to the lack of alternative metropolitan centres in Ireland.

9.4 The authors of the service-type employment report cite international evidence to demonstrate that few firms will move long distances (lengthy relocations are usually confined to routine work), and there has also been a reluctance to shift decision-making functions out of existing centres of power and decision-making (NESC, Report No. 28, p. 43). They then argue that this may have been "due to the industrial emphasis of existing regional policy which may have to be augmented by an urban policy designed to attract, accommodate and contain administrative and decision-making functions within a region" (NESC, Report No. 28, p. 43). With regard to urban policy the authors further argue that "if differentials between settlements in employment opportunities in the white collar group are to be reduced, the long term objective must be to diminish the disparities in town size between the principal urban centres" (NESC, Report No. 28, p. 123). The authors do not identify the principal urban centres towards which policies to reduce size disparities should be directed. However, it has been shown in paragraphs 2.1 and 2.2 that there has been a substantial increase in absolute disparity between the size of the Dublin-Dun Laoghaire area and other major cities over the periods 1951-1961 and 1961-1971. If the Greater Dublin area increases in size by 10% between 1971-1981

³The East region contains 59% of Irish office jobs; in the UK 43% are in the South-East Region, and 45% are located in the Atlantic Region of the USA (NESC, Report No. 28, p. 42).

—a modest assumption compared with the 18.3% increase between 1961-1971—then the Greater Cork area would need to expand by 53.4% to hold the absolute size gap constant (if Dublin grows by 15%, the Cork region will need to increase by 80.1% to maintain the absolute size differential). No set of policy instruments is therefore likely to be capable of reducing absolute differences in size between Dublin and Cork or between Dublin and other major urban areas unless extremely radical interventionist policies are adopted such as are rarely used in mixed economies.⁴ A more realistic policy would be to boost the population growth rates of provincial cities to higher rates than that of the Greater Dublin area. The service employment report calls for an explicit urban policy; indeed, it could be argued that a national urban strategy would be a necessary condition of an effective regional office development programme.

9.5 The consultants argued that due to the social, economic and higher educational needs of white collar workers and their families, and because of the high cost of equipping a designated office centre with higher education institutions, libraries, research facilities, conference venues and other essentials of information exchange, only a limited number of such centres can be developed, at least initially (NESC, Report No. 28, p. 133). Relocation of much routine work is hindered by the inadequacies of the existing telecommunications network. In addition, the high cost of improving the telephone service and of connecting regional centres to one another, to Dublin and to towns abroad by means of advanced forms of telecommunication, necessarily limits the number of possible alternative office centres (NESC, Report No. 28, p. 133). The service-type employment report calls for research to identify the type, size⁵ and diversity of urban centres within which office activities could be established (NESC, Report No. 28, p. 96). However, the constraints specified, if observed, would probably limit the number of centres outside Dublin to a maximum of two: Cork and Limerick-Ennis-Shannon. If, for example, Cork and Limerick were

⁴For definitions of the Greater Dublin and Greater Cork areas see paragraph 2.2.
⁵Population size *per se* is not in many cases the proximate causal variable: the existence of external economies, higher educational facilities, the quality of the communication systems—telephones, telex, roads, airport accessibility etc.—are broadly associated—not necessarily causally—with size.

selected, then it may be possible to relocate some interlinked public sector offices to each city⁶—conceived as a catalyst for private sector relocations (Connell, 1976, p. 266)—and to attract office investment from abroad.

9.6 With relevance to policy, the authors argue that “while the Government must aim for efficiency in all branches of economic and social activity, the degree of concentration of office employment in the East region in 1971 and that projected for 1986 is incompatible with stated Government objectives on balanced regional growth” (NESC, Report No. 28, p. 127). The consultants recommend that any combination of seven different strategies may be proposed and “their aim is to alter the pattern of office employment between regions” (NESC, Report No. 28, p. 127). With the exception of the strategies to encourage the expansion of the planning, control, market research, R and D and other technical functions of indigenous industrial concerns and the recommendation to delegate executive authority to regional units of central agencies, the strategies recommended⁷ fall into two categories: (i) the relocation of private and public sector enterprises currently based in Dublin and (ii) the attraction to Ireland of internationally mobile office projects.

9.7 An analysis by Economic Consultants Limited of research data on office movement and the experience of various organisations concerned with the decentralisation or attraction of offices, indicated that the establishment of internationally mobile office activity in non-central locations abroad (i.e., in towns outside Dublin in Ireland) is uncommon (*Economic Consultants Limited, 1973*, p. 1). This finding is not surprising given the lack of suitable alternative metropolitan locations in Ireland. A decision, for example, to develop one or two counter-magnet cities to Dublin in the regions, with an office complex as an integral element, would increase the probability of internationally mobile office projects locating in such centres. The range of activities identified by Economic Consultants as having the highest probability of

⁶The basic rationale being to maximise linkages between these public sector offices within each city and simultaneously to stimulate linkages between them and private sector firms.

⁷For detailed specification of each strategy see NESC, Report No. 28, pp. 129-130.

locating a project in an Irish location other than Dublin were similar to the type of enterprises which the IDA Service Industries Programme has been attracting: computer services, engineering consultancy, research and development, together with the "hiving off" of routine and standardised data processing activities within insurance and banking. This evidence, in combination with the results of the IDA's Service Industries Programme, suggests that, as a consequence of the limited size of the pool of internationally mobile service-type projects and the reported reluctance of many such firms to establish offices outside Dublin, the attraction of office projects from abroad is not likely to constitute a major proportion of regional job creation—unless a policy is adopted to develop a counter-magnet city with a planned office complex.

9.8 Some evidence relating to the potential for attracting office projects from abroad is available from the results of the Service Industries Programme established by the IDA in 1973 which represents an extension of their incentives programme⁸ beyond the manufacturing sector. The scope of the programme incorporates engineering and design consultants, architectural services, geological information processing, computer software, quantity surveying, project management and administrative headquarters of service companies. Between mid-1973 and the end of 1976, 37 projects had been approved under the programme with a total *projected* employment of 2,837 when fully operational (*Industrial Development Authority, Annual Reports, 1973-1974, April-December 1974, 1975 and 1976*). During 1975, 1976 and 1977 the number of job approvals were 1,281, 1,187 and 1,263 respectively with approximately two-thirds of the projects arising from abroad. The programme is confined to export orientated projects or to those performing an import substituting role. It is fulfilling a very important *qualitative* role in the economy by creating employment opportunities for skilled technologists and graduates in certain sectors of service industry and bringing more highly paid employment to an area. In quantitative terms, both the number of jobs being created and the limited size of the pool of internationally mobile

⁸Service Industry incentives include non-repayable grants for the purchase of buildings and equipment; rent reduction grants; capital leasing subsidies, and grants towards the cost of approved training programmes (see NESc, Report No. 28, p. 104).

service-type projects, suggest that the programme will probably continue to contribute between 5 and 10% of the IDA's annual employment total.

9.9 With reference to relocation from Dublin, Connell has stated that few offices, public or private, have shown any willingness to move out of the capital (Connell, 1976, p. 265). A well conceived system of incentives might promote a measure of relocation of private sector offices from Dublin to cities such as Cork or Limerick-Ennis-Shannon. Measures to influence the relocation of service-type activities have not been in force long enough in most countries to permit generalisations about their results or effectiveness. Connell has proposed that several related Government departments should be moved to one location—hopefully drawing linked private sector firms also (Connell, 1976, p. 266). There is no substantive evidence in the Irish context concerning the opportunity costs of relocation, i.e., whether net resource costs are exceeded by net gains in output from relocation. Also, there is a spatial imbalance in the supply and demand for white collar office employment with most new jobs in the East region and an excess of labour seeking office jobs in all other regions. If the migrants from the regions who have migrated to Dublin for office employment express a preference to work in another region, then a policy of relocating offices⁹ in the regions will increase their welfare. The establishment of a mobile office project from abroad in a peripheral region is consistent both with maximising net national job creation and regional equity. The relocation of a private or public sector office from Dublin to a regional centre—superficially a redistribution of income and employment between regions and therefore in harmony with the equity goal—may also generate national benefits.¹⁰ Attraction of office

⁹If a public or private sector relocation is also accompanied by a decentralisation of power and decision-making from Dublin to the regions, then this constitutes an additional benefit to the regional economy. The concentration of decision-making power within large cities is not simply a matter of numbers but also a question of the quality of labour—a higher than average proportion of both Professional and Managerial occupations are concentrated in the East region (NESc, Report No. 28, p. 85).

¹⁰They may display benefits with respect to (i) the present value of private benefits and private costs to the organisation; (ii) the present value of social benefits and social costs; (iii) the private costs and benefits of employees in the organisation; (iv) the net gains in output from relocation compared to net resource costs.

investment from overseas to the regions and relocation of activities (both public and private) from Dublin should be regarded as complementary elements of service sector policy. Furthermore, all new public sector office units are potentially locationally mobile and if they can function as efficiently (or more efficiently) in one of the counter-magnet centres then they should be established there.

9.10 Tourism is an important service industry in the Irish context contributing to local employment and the balance of payments. Many of the regions most suitable for tourist development are in Designated Areas where there is a need to provide additional employment opportunities. For such regions the development of their amenities for tourism and recreation constitutes an instrument of regional strategy. Measures to improve hotel accommodation, to develop roads and access facilities such as airstrips will also strengthen the attractiveness of an area for manufacturing investors.

CHAPTER 10

CONCLUSIONS AND POLICY ISSUES

Introduction

10.1 Any consideration of urban and regional policy options must start by examining the most recent Government statement on this issue—Review of Regional Policy (May, 1972)—which envisaged:—

- (1) Development of Dublin to be such as to accommodate the natural increase of its existing population.
- (2) Expansion in and around Cork City, of the Limerick-Shannon-Ennis area, and of Waterford, Galway, Dundalk, Drogheda, Sligo and Athlone.
- (3) Development of county and other large towns of strategic importance in each region, including relatively large expansion of towns in areas remote from existing major towns.
- (4) Continuation of special measures for the development of the Gaeltacht.

This policy statement—together with the regional studies of Buchanan, Lichfield and Wright, the formation of the Regional Development Committee and the establishment of Regional Development Organisations—showed a recognition of the need to link urban and regional planning policies together, although a comprehensive urban and regional strategy was not subsequently developed. Furthermore, the institutional structures to implement a regional strategy have been inadequate and the NESC has identified the minimum changes required to provide a coherent organisational framework (NESC, Report No. 22).

10.2 The Government statement of May 1972 on urban and regional policy issues is now outdated and currently, with the exception of the IDA's regional industrial strategy for 1977-1980, there is a set of relatively unco-ordinated public policies and programmes provided in the wake of economic trends which are not directed towards any regional or urban goals. The most recent reference to regional policy was contained in the White Paper of January 1978 which stated that "priority would be given to those areas of the country which suffered relatively worse during the recession" and that industrial location policy in the 1977-80 period would "reflect both this priority and the Government's concern that industrial development strategy should provide for an even spread of development throughout the country" (White Paper: *National Development 1977-80*, 1978, p. 33). No adequate answer exists to the question of whether regional policy measures retard the growth rate of GNP and thus must be justified by equity¹ considerations, or whether they are an allocatively efficient mechanism—although it has been argued that a *prima facie* case exists for a regional policy which in the long term is consistent with national growth² (O'Farrell, 1970a). However, irrespective of the correct answer to this question, there are many who would argue that, on the grounds of equity, inter-urban (and inter-regional) differences in living standards (as measured indirectly by disposable income *per capita* or personal consumption *per capita*), population growth and employment opportunities should be reduced.

10.3 Regional policy measures are largely justified on the grounds that spatial disparities in various welfare indicators are both excessive and persistent. The question in Ireland is not whether there should be an explicit regional policy—this is universally accepted—but whether the objectives of the 1972 statement need to be revised to incorporate current demographic and employment trends. Any alteration of objectives will inevitably imply changes in the strength and possible range of policy instruments to be applied. Prior to deciding whether

¹Regional policy may be concerned to achieve a number of goals but they may be reduced to two in the simplest model: (i) *efficiency*—maximising growth in the national economy and (ii) *equity*—the reduction of inter-regional disparities in indices of economic and social welfare.

²The assumptions under which regional policy measures may be in harmony with national efficiency have been outlined in the Irish context (see O'Farrell, 1970a).

policy changes are required, it is pertinent to ask what type of regional scenario will result if current policies are continued unaltered into the 1980s. Although the answer to this question must be somewhat speculative it seems likely that there would be:—

- (i) An increasing concentration of population and, in particular, service-type employment opportunities in the Dublin area of the East region. Ross has projected that 53.8% of the national population increase between 1971-1986 would be located in the East region and its share of the national population will rise from 35.7% in 1971 to 38.4% in 1986.
- (ii) Expansion of manufacturing employment in all regions in response to the IDA policy of generating projects across a wide range of urban centres in all size groups.
- (iii) A low absolute increase in office occupations in the regions: a projection of office employment over the 1971-1986 period suggests that 54.2% of the total increase in employment in office occupations would be in the East region (NESC, Report No. 28, p. 91).

- (iv) Retail services would expand in most towns in response to population increase and growth of income; but new functions will tend to be largely confined to the towns above 5,000 population.

10.4 Policies to alter the urban size distribution imply influencing migration flows and this has implications for the population of other places—both urban and rural—throughout the country. Consequently, the logical framework for strategies to influence the growth rate of Dublin and to promote expansion in the regions is a national policy on urban development. In Ireland, the existence of wide inter-regional disparities in employment opportunities and population growth rates is indirectly related to urbanisation policy since the results of the application of regional incentives—in particular industrial investment and service employment—are predominantly urban based (58.4% of New Industry jobs created between 1960 and 1973 were located in the 40 towns above 5,000 population: see O'Farrell, 1975, p. 28). The timing and location of public investment will influence the growth and pattern of development within a nation's urban system—although the amount of discretionary public investment is strictly limited, partly

because the location of much of this investment is determined by the existing distribution of population and employment. New measures or changes in existing policies will have consequences for the urban system and individual urban areas—both direct and indirect. However, there is a limit to the extent to which Government can radically affect population and employment trends in large metropolitan areas. Attainment of maximum growth rates may only be possible if the Government gives attention to varying growth potential within the urban system. There is little information on the contrasting efficiency (private and social) of alternative patterns of urban systems. When it comes to prescriptions our current knowledge is not adequate to draw firm policy conclusions and marginal adjustments to the system must take place within a framework of limited knowledge. Proposals to alter the distribution of population and the urban settlement pattern require an understanding of the slowness of change in population distributions and of the massive diversion of resources needed to effect such shifts in Ireland. Any major reorganisation of the urban system would be extremely costly and it is not possible to predict whether this would result in a net benefit to the community.

Major Conclusions

10.5 The proportion of the national population living in aggregate urban areas has risen from 41.5% in 1951 to 52.2% in 1971. The population *growth rates* between 1951 and 1971 of the Dublin-Dun Laoghaire area (22.6%) and the towns ranked 2-20 in the national size distribution (+23.0%) were almost identical. The absolute size disparity between Dublin-Dun Laoghaire and all other major towns has increased substantially and, given present trends, will continue to increase (the difference between the population of the Greater Dublin area and the Greater Cork area increased by 126,122 to 792,180 between 1961 and 1971). Population growth rates in the hinterland beyond the Dublin-Dun Laoghaire suburbs were higher (+24.1%) than in the Dublin-Dun Laoghaire area (+16.9%) between 1961 and 1971.³ Urban areas may need to absorb an extra one million people over the 1971-1991 period.

³For precise definitions of Dublin-Dun Laoghaire area and Greater Dublin area, see paragraphs 2.1 and 2.2.

10.6 Population decline at regional level between 1971-1975 was limited to the West, North-West and Donegal. A fairly uniform rate of urban population growth has occurred in all regions but there has been considerable inter-regional variation in rates of rural population change. The East region has increased its share of national population from 30.0% in 1951 to 36.6% in 1975. The population shares of Donegal, Midlands, West and North-West have continued to decline while those of the South-West, South-East, North-East and Mid-West remained stable between 1971 and 1975.

10.7 The East region's high rate of natural increase—more than two-thirds higher than in the rest of the country—is the major factor accounting for its rapid population growth since 1966. Population projections suggest that the East's share of the national total will rise from 36.6% in 1975 to 38.4% by 1985. The South-West, South-East and Mid-West should retain their national share, while all other regions face the prospect of continually declining shares. As almost half of the natural increase in the State has occurred in the East region between 1970 and 1975, stabilising or reducing the East's share of national population would be difficult to achieve. However, it is realistic to implement strategies to slow down the rate of increase of the East's national population share.

10.8 There is a degree of consensus in the literature that the search for a unique optimal city size is futile, but this begs the question of the absolute size of Dublin *relative* to the rest of the Irish urban system and whether its future growth should be subject to control. The *absolute size* of the city and its journey-to-work area—fairly modest by world standards—is less appropriate to policy than either its *rate of growth* or its *size* relative to the rest of the urban system. Many positive and negative externalities are so difficult to measure that it is not possible to identify how they vary with city size or to decide whether there is a case on efficiency grounds (private and social) for controlling the growth of Dublin. The higher incomes of large cities may reflect both the higher productivity and inconveniences of cities and their separate effects cannot be isolated. Also many urban "problems"—such as pollution, traffic congestion and crime—are more related to the *spatial structure* or density of the city than to its size. The problem of size must

also be examined in its explicit spatial context with reference to distance from neighbouring large centres. However, whether the increment to the East region's population between 1975 and 1986 population is 200,000 (assuming a continuation of current policies) or 160,000 (implying a major change in policies) it is unlikely to influence either its rate of innovation or its potential as a location for tertiary functions from abroad. There may or may not be a case on efficiency criteria (private and social) for controlling the growth rate of the Greater Dublin area.

10.9 The urban hierarchy operates as a mechanism for promoting growth, distributing goods and services and diffusing innovations. There is a marked stability in the rank order of towns in the upper levels of the national urban system. An analysis of the changing retail structure of the 49 towns in the Midlands and Border Area for the 1951-1961 and 1961-1971 periods indicates that relative changes in the composition and size of the retail structure of urban centres were fairly uniform. New higher order retail functions have concentrated predominantly in towns above 5,000 population. Little diversification of retail functions will occur in towns below 3,000 population, although absolute decline or disappearance of these centres is unlikely.

10.10 There are significant relationships between the spacing of towns in Ireland—as defined by distance to nearest neighbour of equivalent or greater rank—and population size, income density and distance from the nearest city. The national urban hierarchy and the spatial distribution of towns in the economy are *two distinct concepts* which are not necessarily in harmony. Satisfactory economic growth is probably compatible with a fairly wide range of differences in the degree of spatial concentration of the population as it is with respect to its hierarchical distribution. There are no adequate criteria for judging whether one type of hierarchy is superior to another. The key focus of policy is on possible size changes of existing towns and the most appropriate strategy is to plan for a range of town sizes through marginal adjustments to the existing system.

10.11 There is a considerable random element in the regional pattern of grant-aided new industry projects (see O'Farrell, 1978a and

Appendix). The analysis of industrial location at DA/NDA level suggests that a spatially tiered grants scheme has the ability to influence significantly locational behaviour within Ireland. The industrial location pattern with respect to town size group shows that there are more significant statistical relationships in Designated Areas than in Non-Designated Areas but, in general, the relationships are weak. The probability of a town of a specific size group attracting a new industry project does not vary regionally but the probabilities do vary substantially by town size.⁴ However, the geographical location of an urban centre of specific size within the country, however peripheral, has not influenced the probability of that centre attracting a grant-aided industrial project. This is partly a result of IDA policies—particularly the capital grants system and the organisation of itineraries—which have tended towards the equalisation of the attractiveness of different regions.

10.12 The number of manufacturing jobs created in New Industry projects per 1,000 urban population between 1960-1973 varies from a maximum of 59.3 per 1,000 (1,500-5,000 town size group) to 47.2 (5,000-10,000 group) to approximately 32 for the less than 1,500, 10,000-25,000 and 25,000-150,000 groups. The major disparity occurs between these groups and Dublin, where only 7.2 jobs were created per 1,000 urban population.

10.13 Between 1973 and 1977 there was a net national increase in manufacturing employment of 1,900 but the East and North East regions combined recorded a net decline of 12,050 while the rest of the country achieved an increase of 13,950 jobs. There was a marked regional concentration of job losses between 1973 and 1977 in the East (25,650) and North-East (5,500) regions. Within the East region, the decline in manufacturing was particularly severe in County Dublin where there was a net decrease of 16% (12,750 jobs) between 1973 and 1977. The job creation targets under the 1977-1980 Industrial Plans imply a net increase of 29,500 manufacturing jobs outside the East region. The gross job targets of 13,500 for the East and 9,500 for County Dublin—although they represent a marked concentration of

⁴Population size is not necessarily the proximate causal variable.

IDA promotional activity in this region—will neither restore manufacturing employment to its 1973 levels nor make a contribution to the job requirements arising from natural increase in the population. A marked sectoral contrast in regional employment trends has emerged with increasing concentration of service employment in the East region while, simultaneously, it has recorded the greatest net decline in manufacturing employment.

10.14 The concept of a growth centre as debated in Ireland is not usually that of the classic definition of spatially clustered, interlinked industries inducing spread effects in their surrounding hinterland, but the alternative, namely, a geographical clustering of economic activities in an urban area (see paragraph 8.2). A continuum of strategy options exists ranging from concentration to extreme dispersal; a wide range of possible alternatives may be traded off against each other and the most appropriate policy for one region may not be suitable for another or for the nation. Three types of growth centre may be relevant in the Irish context: (i) service centres in rural areas; (ii) larger growth centres in the regions and (iii) one or two cities selected as counter-magnets to Dublin. Regional growth centres are vital to promote the growth of peripheral regions as a means of developing external economies, attracting large manufacturing units and to function as centres for receiving innovations and diffusing them to peripheral areas of the regions. There are polarization trends in the Irish economy which suggest that the only feasible way to challenge the concentration of population in the Dublin area is to induce more rapid polarization elsewhere through the designation of one or two cities as counter-magnets. The failure of growth centres in many countries to induce spread effects in their hinterlands has led to disenchantment with such strategies, but most spread mechanisms take place over decades rather than a few years and tend to be concentrated within the commuting zone of the growth centre. The major arguments for regional growth centres—summarised in paragraph 8.4—are valid in the Irish context. If a growth centre policy is implemented, then strategies for the development of secondary centres outside this commuting zone will be necessary as a complement to a growth centre strategy and to stimulate trickle up effects in the regions. The linkages within and between urban centres have been shown by Pred and

others to be the key processes underlying the spatial development of the economy.

10.15 Knowledge of the processes operating in regional labour markets is deficient. In the context of urban and regional labour markets there are frequently two implicit assumptions underlying location policy. First, that the introduction of new employment opportunities into a region will "mop up" pools of unemployment and, second, the further assumption that this operation will be a direct one, i.e., that the unemployed will be recruited. The assumption that the work forces of new employers in the regions will be drawn from the ranks of the unemployed influences, in part, the argument that the availability of unemployed labour is one justification for regional policy. From a policy perspective, five questions are of importance in this context: (i) what are the effects of the recruitment process of firms in various town sizes and regions upon local labour markets? (ii) to what extent are jobs filled by migrants from other regions or abroad? (iii) what are the characteristics of the employees recruited to firms in terms of various dimensions of occupational and job mobility? (iv) will participation rates rise? (v) what will be the impact upon the hard-core unemployed? Research has shown that participation rates in Ireland are sensitive to pressures of demand, so participation rates should rise, but the question remains as to the effects at the level of individual labour markets. If jobs in new plants are filled largely by labour moving from previous employment in the region or other regions (and here the subsequent reactions of the firms from whom labour is poached are important) it will be more difficult to refute the cynics' dictum that regional policies are measures whereby the poor of rich regions subsidise the rich of poor regions.

10.16 The traditional view of the service sector as being largely induced by expansion elsewhere in the economy must be qualified by the realisation that many service activities stimulate growth in primary and manufacturing production. Since the expansion of the service sector has also increased regional disparities between the East region and the rest of the country, more attention should be given to the scope for influencing the location of service activities than has hitherto been the case in Ireland. An earlier NESc report has suggested that the

number of designated office centres in the regions should be small (NES, Report No. 28, p. 133). Unless two or three such centres are identified as a component of a national urban strategy and new office employment in the regions concentrated upon them, the existing trend of increasing disparities in office employment between Dublin and the rest of the country will continue⁵ (see NES, Report No. 28). The establishment of many internationally mobile office projects in non-central locations (i.e., outside Dublin) is unlikely unless there is an explicit policy to develop one or two designated office centres in the regions. The IDA Service Industries Programme—the scope of which is restricted to export and import substituting projects—has been generating about 1,200 job approvals per annum, approximately two-thirds of which came from abroad. The target for the Service Industries Programme, 1977-1980, is 4,000 job approvals or approximately 1,300 per annum (*IDA Industrial Plan 1977-1980*, p. 22). A carefully conceived system of incentives might promote a measure of private sector relocations from Dublin to designated office centres in the regions. Also, the relocation of related sections of Government departments to a centre might attract linked private offices. A strategy to relocate public or private offices from Dublin to the regions will be consistent with regional equity and may also yield significant national benefits. An overseas office project established in one of the developing regions outside the East will be consistent with maximising net national job creation and regional equity. Both relocation and attraction of investment from abroad should be conceived as complementary parts of a service sector policy, especially as the supply of mobile office projects from overseas is somewhat limited. Tourism should also continue to diversify employment opportunities in developing regions.

Alternative Strategies

10.17 A realistic policy for a national urban system is likely to be based upon a number of goals with the attendant problems of resolving conflicts that multiple goals imply (O'Farrell, 1970c). An urban strategy must be conceived within the wider context of national development

⁵Of the additional 59,664 white collar jobs created between 1961 and 1971, 59.6% were located in the East region (NES, Report No. 28, p. 79).

objectives and the following goals, which may conflict in the short-term, might be important:—

- (1) Maximising national economic growth.
- (2) Reducing relative inter-urban welfare disparities (including population imbalance) between Dublin and other major urban centres.
- (3) Reducing social costs (including congestion and environmental pollution) in urban areas.

Some of these goals are too broadly defined for implementation and would need to be transformed into objectives—quantitative targets capable of observation, measurement and analysis. An urban strategy can aid the goal of maximising national economic growth by focusing upon the spatial structure of towns and cities; the nature of inter-urban growth transmission; and the role of leading towns as innovators. The second goal would require some restriction on population growth rates in Dublin,⁶ but the major element in such a policy is likely to be satisfied by promoting urban centres in peripheral regions. This implies defining the width of welfare disparities—in terms of population, employment, income and other welfare indices—between Dublin and the other urban areas of interest. No set of policy instruments is likely to be capable of reducing absolute size differentials between the Dublin-Dun Laoghaire area and any other major area in the medium term; but it is realistic and feasible to boost the population growth rates of provincial cities to rates exceeding that of Dublin-Dun Laoghaire. Hence the degree of convergence in growth rate differentials and the width of inter-urban welfare disparities to be aimed for should be specified. This is based upon the observation that inter-regional (and inter-urban) inequalities are endemic in the very process of growth—largely as a consequence of the contrasting sectoral structure of different regions—and that it is therefore a Utopian concept to expect any regional development programme to eliminate *absolute* welfare disparities between towns and regions (O'Farrell, 1970c, p. 88). However, it must be emphasised that convergence in *relative* welfare

⁶The possibility that incomes *per capita*, population change and unemployment vary more within Dublin both personally and spatially than in the remainder of the country must be recognised.

differentials may occur while simultaneously absolute differences may continue to increase. What is needed is an urban growth policy which establishes broad targets for the distribution of population and of economic activity and yet is flexible enough to embrace a range of competing objectives from amongst which politicians must make choices.

10.18 The key question facing policy makers is whether the continuing spatial concentration of an increasing proportion of the State's population in the East region is consistent with national and regional goals? It is clearly in conflict with the goal of regional equity but to what extent, if any, is it not in harmony with the efficiency goal? This is an extremely complex question and one which it is not possible to answer definitively because of the problems of identifying, measuring and weighting externalities. The extent to which a population increase of 281 thousand in the East region between 1971-1986 conflicts with national efficiency (output maximisation and cost minimisation) may be largely a function of the type of land use and transport policies pursued there during the next decade. Any strategy adopted during the next decade is going to have a major impact upon the urban system outside the East; the demands upon infrastructural investment and the pressures upon the quality of the environment in Irish cities and towns from the population and income growth rates now in prospect are going to be extreme.

10.19 One possible strategy for the next decade is to continue with current policies which, in terms of regional employment creation, are predominantly manufacturing based. This option (Strategy A) is likely to result in the East region's share of national population rising to 38.4% (Table 9).

TABLE 9
Alternative Strategies: Population Targets for East Region

	East Region Population 1975	Share of		1986 Target Population	1986 Share of National Total
		1975 National Total	1986 Target Population		
Strategy A	1143	36.6	1343.3	38.4	
Strategy B	1143	36.6	1273	36.4	
Strategy C	1143	36.6	1310	37.4	

Source: Walsh (1978) and Ross, M. (1977 mimeo) "Regional Disparities".

Any policy to reduce the projected size of the East region in 1986 to below the 1,343 thousand implies initiating migration away from the Dublin conurbation. Given a population of 1,143 thousand in 1975, a target figure of 1,273 thousand for 1986 would stabilise the East's share of national population at about 36%, but also it would imply "redirecting" approximately 70,000 of the 1986 projected population target for the East to other regions during the next eight years (Strategy B). This would mean curtailing the growth of the Greater Dublin area to around two-thirds of its natural increase. Another alternative strategy would be to aim for a population share in the East region intermediate between the 36.4% under Strategy B and the 38.4% projected to occur with a continuation of current policies (Strategy A). Thus Strategy C would imply "redirecting" approximately 33,000 of the East's projected population figure for 1986 to other regions.⁷

10.20 What system of incentives and/or disincentives (such as taxing office space and the use of permits⁸) would be adequate to overcome the trends of the past—and the likely future trend if current policies persist—towards a high degree of spatial concentration of development (especially service employment) and population in the East region? The next question is how flexible would such a policy be, given budgetary resources and political constraints? What range of policy instruments would be necessary in order to achieve the population targets of strategies B or C? The application of any new instruments will be based upon the assumption that the Government will wish to continue to attract industrial investment to a wide range of small and medium sized towns in all regions. This should be regarded as a constraint upon the achievement of other regional objectives.

10.21 The tendency towards spatial concentration of employment (especially services) and population in the Greater Dublin area is so strong that the only policy with any realistic chance of stabilising the East region's share of national population is to accelerate the process

⁷Other strategies could be proposed but these three are regarded as the most likely alternatives given the Government's objective of securing full employment by 1986.

⁸These policy instruments—such as curbing the expansion of certain activities by a system of controls as formerly were employed in London—could be implemented but they may conceal hidden costs such as the deferring of investment.

of polarisation elsewhere, possibly in one or two counter-magnet cities. An effective counter-magnet strategy (similar to the metropolises d'équilibre in France) would necessitate both substantial infrastructural investment, a planned office development programme incorporating the location of new public sector offices, public and private sector relocations from Dublin and the attraction of mobile offices from abroad, together with the achievement of the manufacturing job creation targets for the current (1977-1980) and future plans. The scope for increasing the inflow of office projects from abroad under the existing Service Industries Programme of the IDA is somewhat limited, but the designation of a counter-magnet city with a planned office centre should increase the proportion of international office projects willing to locate outside the East region. However, a systematic policy for relocating public and private offices from Dublin in a counter-magnet city, together with the location of new public sector offices in the designated centre, would be essential if progress towards the stabilisation of the East region's population share is to be achieved. The "redirection" of approximately 40,000 of the 1986 projected jobs from the East region—as envisaged under Strategy B—implies a total of around 70,000 of the 1986 projected population,⁹ assuming a dependency ratio of 73.2. There would be a negative expenditure multiplier effect in Dublin and a positive one in the destination region, but much expenditure would probably "leak" back to Dublin. As these population targets under Strategies B and C are crude approximations, no allowance has been made for these regional multiplier effects—a position further justified by the absence of any data on the size of Irish regional multipliers. Hence, Strategy B would probably require approximately 5,000 job "diversions" per annum from the East region up to 1986 to achieve its objective of stabilising the East's population

⁹The Irish dependency ratio was 73.2 in 1974 (see NES, Report No. 35, page 68) and it refers to the number of young (under 15) and old (65 and over) persons per 100 in the "active" age group 15-64. However, a proportion of the females (chiefly married) and males in the 15-64 age group would also be dependent upon a redistributed job. Conversely, the age structure of the redistributed population is likely to be younger than the national average (many unmarried workers with no dependents and married couples with no children both of whom are at work) with a consequently lower dependency ratio than the national average. There is no way of predicting the effects of these conflicting processes and therefore the population estimates associated with job redistribution should be regarded as a crude order of magnitude and not as a forecast.

share. It would be highly optimistic to assume that public and private office relocations together with the location of new public sector offices—even with the attractive pull of the planned infrastructural development of a counter-magnet office centre and generous relocation incentives for the private sector—could achieve a "diversion" of around 40,000 jobs by the end of 1986. This implies that to achieve its population objectives, Strategy B would also be dependent upon the manufacturing sector and, as the objective would be to stabilise the East region's population share, some of the grant-aided job creation planned for Dublin would be "redirected" to one or two counter-magnet cities. The Greater Dublin area would provide the bulk of the resources to develop a counter-magnet city in terms of relocated public and private offices and the diversion of potential manufacturing and office jobs. However, as has been shown in paragraphs 7.13 and 10.13, the gross manufacturing job creation targets for both County Dublin (9,500 jobs) and the East region (13,500) for the 1977-1980 period will not be sufficient either to restore manufacturing employment to its 1973 level or to make a contribution towards the job requirements arising from the natural population increase in the region. Manufacturing employment decline in the County Dublin area constitutes one of Ireland's major regional problems at the present time so that a policy to relocate any of the East region's 13,500 manufacturing job target for the 1977-1980 period will serve to exacerbate inter-regional differentials in manufacturing employment growth. The implementation of Strategy B would therefore imply a further decline of the largest manufacturing base in the country and this might have a detrimental effect upon growth throughout all regions.

10.22 A reduction in the projected gross manufacturing job target for Dublin, as would be necessary to achieve the objectives of Strategy B, would produce an increase in the unemployment rate amongst industrial workers—most of whom could not be absorbed into the service sector. The implementation of Strategy B would require an explicit migration policy with aids to cover the cost of house moves and co-ordination with the National Building Agency to provide houses in areas of industrial expansion.

10.23 The rapid development of one or two counter-magnet cities in order to stabilise the East region's population share would place very substantial demands upon infrastructural investment in the selected centres. The resource costs to the economy of a rapid build up of one or two counter-magnets—although not quantifiable—could be large and might require a diversion of resources from infrastructural investment in smaller towns, at least in the short term. Furthermore, there may be other costs associated with Strategy B which are difficult to quantify. For example, most industrial workers in Dublin may prefer to be employed in their home area rather than migrate to a regional centre and thereby suffer a welfare loss. Conversely, administrative staff in the public sector—many of them from outside the Greater Dublin area—may display a preference to be relocated to the regions.¹⁰ It is difficult to argue a strong case in favour of Strategy B and, although not all the costs and benefits are identifiable, the arguments presented suggest that a less radical alternative may be more appropriate.

10.24 Strategy C, with an East region target population share of 37.4% in 1986, implies "redirecting" approximately 19,000 jobs from the East region, which—assuming a dependency ratio of 73.2—is equivalent to around 33,000 of the 1986 target population of 1,343.3 thousand. This suggests that policy instruments would be required to "divert" approximately 2,400 jobs per annum from the East region up to 1986, assuming that current policies would provide employment in the region for its natural increase. It would be feasible to achieve the more modest goal of halving the rate at which the East region is increasing its national population share by policies directed towards the office sector. This would permit the IDA's strategy towards restoring Dublin's manufacturing base to continue as outlined in the 1977-80 Industrial Plans, i.e., creation of 9,500 jobs in County Dublin. However, the reliance upon relocating and, in some instances, decentralising offices from Dublin to the regions, constrains the type of regional policy that can be implemented. Little success is likely to

¹⁰Ross has referred to a publication by O'Broin and Farren (E.S.R.I. Paper No. 93, June 1978) which reports that the level of relocations up to the present time has been inadequate to meet the demand amongst junior typists in the Civil Service (see Ross, 1978, p. 316).

attend a policy of attracting either relocated offices or offices from abroad to the major urban centre in each region. Hence a form of counter-magnet strategy would also be necessary to achieve the objectives of Strategy C. As under Strategy B, the counter-magnet policy would require substantial infrastructural investment, particularly in communications and the provision of office accommodation in advance of demand. The "redirection" of approximately 2,400 jobs per annum from the East region to a counter-magnet centre up to the end of 1986 may be achieved by a number of policies each requiring a specific set of instruments.¹¹

- (i) The location in the counter-magnet city of some of the new public sector employment which will be generated between 1978 and 1986 and would have located in Dublin under current policies, subject to the constraint that it can function as (or more) efficiently in the counter-magnet city.
- (ii) The relocation and, where possible, decentralisation, of existing public sector offices from Dublin to the counter-magnet city with, if feasible, several related offices as the basis of the policy.
- (iii) The use of incentives¹² to increase the probability of new private sector employment which will be generated between 1978 and 1986 locating in the counter-magnet city rather than in Dublin.
- (iv) The introduction of a package of incentives designed to achieve the relocation to the counter-magnet city of some existing private sector offices in Dublin.
- (v) The specification of a job creation target under the IDA Service Industries Programme for the counter-magnet city.¹³

(vi) A migration policy with aids to cover the cost of house moves and co-ordination with the National Building Agency to provide housing in the counter-magnet city.

¹¹See NESC, Report No. 28, Chapter 6.

¹²NESC, Report No. 28, p. 104.

¹³A figure of 2,000 new jobs over the period 1978-1986 would represent a reasonable target.

10.25 The scale of investment and relocations involved over the eight-year period up to 1986 in order to achieve the goals of Strategy C would be smaller than under Strategy B. The resource costs to the economy are impossible to quantify but a carefully planned development of a counter-magnet city might not absorb significantly more public investment than the costs of accommodating the same expansion in Dublin, especially if increasing negative externalities, such as congestion, are incorporated. The concept of a counter-magnet centre involves creating conditions which will permit new or relocated organisations to operate as efficiently as in Dublin and as far as possible to internalise their linkages in the provincial city and region. If a counter-magnet policy is not pursued, then major decision-making units and certain manufacturing plants and higher-order offices will probably have no viable locational alternative to Dublin and the current polarisation trend will continue.

10.26 After a phased development of one counter-magnet city—Cork is the obvious choice—the emphasis of the strategy could shift to a planned expansion of another (Limerick-Shannon-Ennis). Hence Strategy C presents an opportunity to achieve a higher degree of integrated development in some regions, i.e., the minimisation of extra regional leakages. Specifically, the chances of achieving more integrated regional development will be improved if measures are adopted to promote activities—both manufacturing and office—which not only give rise to regional exports but also generate intra-regional linkages. If the Government seeks to achieve the objectives of Strategy C by a policy of developing counter-magnets—a form of “concentrated decentralisation”—it will not be sufficient simply to locate new large scale activities at the designated centres. If the new enterprises are dependent to a substantial degree upon Dublin (or towns overseas) for external administrative services or physical inputs and components, then the extra-regional multiplier effects deriving from the growth of the counter-magnets will be concentrated, as now, in Dublin and abroad and the policy will be more limited in its impact. Therefore, a strategy to develop one or two counter-magnets should include measures to promote the location of as many activities as possible whose direct multipliers will involve purchases from within the region and, where feasible, from small towns in other regions. At present,

there is a dearth of information on projects which can generate such linkages and this data gap would need to be closed as a prelude to policy action. A co-ordinated attempt should be made to insure that—as Connell has proposed—as many as possible of the office units appearing in a counter-magnet city are functionally inter-dependent either with one another or with already existing activities in the destination area. (Connell, 1976, p. 266). In the absence of such measures, Cork and Limerick are likely to remain in a highly “subservient” relationship with Dublin. It must be recognised, however, that, due to the degree of openness of the Irish economy, it is inevitable that there will be leakages abroad from almost any investment, irrespective of its location. Policy should be concerned to minimise such leakages.¹⁴

10.27 An important dimension of Strategy C is the constraint that the IDA's regional industrial policy will continue to foster development in all regions throughout the range of small, medium and larger towns. Between 1960 and 1973 the four towns between 25,000–150,000 population—Cork, Limerick, Waterford and Galway—attracted 12% of all New Industry projects (18.6% of the jobs) while the small settlements below 1,500 population attracted 25.1% of New Industry projects (O'Farrell, 1975, pp 27-28). The IDA Industrial Plan 1977–1980 has established a gross job creation target of 9,200 which represents 19.2% of the total national share for the four towns between 25,000 and 150,000 population (the equivalent target for County Dublin is 9,500 jobs). In parallel with the continuing industrial development of the major urban centres, the IDA policy during the 1977–1980 period will seek to disperse industrial projects throughout the smaller urban centres in all regions. Dispersal of certain types of project into smaller communities will not necessarily incur opportunity costs, so that a selective industrial location policy with respect to small towns is consistent with efficiency. The evidence that closure rates of new industry projects do not vary by town size location is reassuring to policy makers concerned to stimulate investment in a wide range of communities (O'Farrell, 1976, p. 446).

¹⁴Leakages from the region are at least partly compensated for by injections from abroad.

10.28 A valid question which should be asked in relation to Strategy C is why it should be implemented in preference to a continuation of current policies (Strategy A)? The major benefits which will arise from a decision to abandon current policies and adopt Strategy C are:

- (i) The rate of increase of population imbalance between the East region and the rest of the country will be reduced.
- (ii) Some positive action will be taken towards alleviating the current inter-regional disparities in the supply and demand for service employment.
- (iii) Policies to relocate (and in some cases decentralise) public and private sector offices from Dublin and to locate some new public sector units in a counter-magnet city will contribute to a reduction of negative externalities in Dublin and, if appropriate land use policies are implemented, should not exacerbate them in the destination area.
- (iv) The infrastructural investment (especially the improvements to communications) in the two counter-magnet cities, together with the development of public and private sector office complexes and the further expansion of their respective manufacturing sectors, will create important new external economies in these centres which will enhance their prospects of attracting further investments from outside their regions.

(v) Some public and private sector relocations will also be accompanied by a decentralisation of decision-making functions from Dublin to the counter-magnet cities.

(vi) Relocation may lead to a public or private sector office increasing its efficiency¹⁵ by organisational restructuring.¹⁶

(vii) A counter-magnet policy will improve the prospects of achieving more integrated regional development by promoting the establishment of activities whose direct multipliers will

¹⁵Cogan has demonstrated that productivity growth in seven of the eight service sub-sectors (transport was the exception) between 1956 and 1971 lagged behind industry and agriculture so that there is considerable scope for improving efficiency (Cogan, 1978, pp. 185-186).

¹⁶See NES. Report No. 28, pp. 122-125.

involve, to the maximum extent possible, purchases within the region.

(viii) A relocation of some public sector offices to a counter-magnet centre would be consistent with the locational preferences of many young white collar workers and would thereby improve their welfare.

It has not been possible to identify, measure and aggregate the complete range of costs and benefits for each strategy and therefore no definitive statement can be made as to whether Strategy C would be consistent with the national goal of full employment by 1986. Fundamentally, it is impossible to quantify and weight the two sets of costs and benefits associated with, on the one hand, "redirecting" 33,000 of the East region's target population for 1986 to two counter-magnet cities and, on the other, absorbing that population and employment growth in the East region. Assuming careful land use planning in the counter-magnet cities, efficient implementation and coordination of incentives schemes and a commitment to organisational restructuring by relocated public and private sector offices, a net national economic benefit appears to be more probable in the medium term than a net national cost. Hence, a well conceived implementation of Strategy C—in addition to being consistent with regional equity—should represent more than simply a spatial redirection of enterprises away from Dublin to a couple of counter-magnet centres.

10.29 Whether Strategy B or C is implemented or whether it is decided to continue with current policies (Strategy A) or adopt some other alternative strategy, there will be substantial impacts upon the size, infrastructure and environmental quality of the complete Irish urban system and especially upon the 40 towns over 5,000 population which contained 86.8% of the aggregate urban population in 1971. Irrespective of which particular strategy is adopted, an incrementalist approach to the development of a national urban strategy is preferred. It will be important to avoid a position of attempting to please all interest groups more or less simultaneously, with the inevitable result of limited resources being spread so widely that the critical effort in key areas may be insufficient to realise objectives. Initially, broad targets should be established relating to population, employment and public

investment for the largest 10–15 urban centres. These targets would follow from a decision upon which of the overall strategies (including, possibly a continuation of present policies) is to be adopted and the targets would also take account of the spatial distribution of urban centres within the country and their previous growth rates. Then, at the second stage, targets and policies to be directed towards the smaller towns in the regions would be developed. At this second stage, the ways in which the economic base of these communities could be stimulated, and issues such as the efficiency of supply of public services, accessibility and mobility of rural residents and the location of housing schemes, would be of paramount importance. An earlier NESC report has referred to the need to establish a process of policy and programme co-ordination in order that the activities of the Government, Local Authorities and private bodies all combine to direct changes in urban and regional development towards the achievement of national objectives (NESC, Report No. 22, 1976).¹⁷ To be successful in the public sector such an achievement will be dependent upon the spatial co-ordination of activities in the various levels of Government which directly and indirectly affect urban and regional developments. Such an approach should be concerned with policy instruments to influence the distribution, size and function of settlements; the internal structure and processes of change in metropolitan areas; the location of employment opportunities and public services; and environmental constraints and standards. Clearly, the range of policy instruments that can affect change at the inter-urban level is limited and it would be unrealistic to expect dramatic results—especially in larger towns. Conversely, a modification of underlying employment and population trends, as suggested, for example, in Strategy C, is feasible in the medium term.

Policy Instruments

10.30 The instruments available within the city to change the intra-urban spatial distribution of activities are more powerful than instruments available for modifying inter-urban spatial distributions

¹⁷This begs the question as to what extent poor co-ordination constitutes a problem: in what ways and to what extent has it detrimentally affected regional development programmes in the past? This is a question to which there is no adequate answer at the present.

(Richardson, 1973a, p. 189). This is primarily because planning, zoning and land use controls are more effective (although not necessarily more efficient) than investment grants, subsidised interest rates etc. (Richardson, 1973a, p. 189). It is important to distinguish between those Government policy instruments which are directly related and those which are indirectly related to urban policy. Central Government's national programmes—sectoral manufacturing policies, fiscal and monetary measures, transport policy, health and welfare expenditure—have different impacts on towns and regions (Richardson, 1973a, p. 190). *Regional* industrial policies have considerable urban side-effects because most economic activity is urban. Measures such as the provision of infrastructure simultaneously serve national, regional and urban ends (Richardson, 1973a, p. 190).

10.31 The major problem is the choice of policy instruments that are most cost-effective (Richardson, 1973a, p. 191). This choice is quite difficult in the case of an expanding centre because the rate of immigration and subsequent natural increase depend primarily upon the creation of job opportunities. Therefore, the important policy instruments are those that prove most attractive to outside industry and service-type employment. It should be possible to influence but not determine the relative growth rates of individual centres as there is little control that can be exercised over the purchasing decisions of economic enterprises. Investment in infrastructure may be important if it is believed that public capital investment can generate private investment, but it is unclear whether industrial infrastructure provided in advance of demand—such as industrial estates, roads, power and water supplies—is more strategic than social infrastructure (health, education, welfare facilities and housing) (Richardson, 1973a, p. 191). Industrial infrastructure may be of greater priority when creating new manufacturing jobs, but social infrastructure may be more important in generating office employment. In practice, both types of infrastructural investment are necessary with more emphasis upon industrial infrastructure in most regions in the short term. The role of indirect policy instruments—such as improving communications—is primarily a longer run one of redistributing growth probabilities between urban centres by influencing growth constraints, such as relative accessibility. The problem in many regions in Ireland has been that infrastructural

investment has tended to lag behind productive investment with the result that excess demand has been placed upon parts of the road network, water supply and telephone systems. Understanding of the process by which public investment generates new private investment is still very hazy (Richardson, 1978, p. 247). The success of the IDA's advance factory building programme may be cited; but one of the problems is that infrastructural investments are usually only one of a mixture of incentives being employed at a particular time so that it is difficult if not impossible to identify the effects of *individual* instruments. The role of *direct* policy instruments is primarily a shorter or more medium-term one involving, for example, subsidies to capital and mobility allowances to workers. Direct policy instruments have a role complementary to indirect ones to play in guiding such activities as private and public office locations away from Dublin to designated centres.

10.32 The effectiveness of instruments for influencing urban growth through employment location policies is dependent on a sufficient flow of mobile jobs and is strongly conditioned by the level of industrial and commercial investment. The vigour with which employment instruments are used depends on judgments about the importance of any resource costs incurred in terms of output foregone because of their application. Expansion and relocation is greatest during periods of national economic upswing and consequently the economic cycle markedly affects the ability to influence urban growth (Bendixson, 1977, p. 169). It is important to emphasise that manufacturing investment incentives operate on the margin and must be used in relation to national economic and social trends. Such evidence as there is suggests that individual instruments have only limited impacts upon urban growth and therefore instruments are always used in packages constructed so as to have a mutually reinforcing effect (Bendixson, 1977, pp 169-170). Consequently, co-ordination becomes critically important where several levels of Government have responsibility for different instruments. The composition of appropriate packages of instruments is still evolving in most countries, but there appears to be a trend in the direction of increasing use of incentives rather than controls, greater use of taxation rather than permits or grants, and of increased importance being attached to good environment and

improved quality of urban life as incentives to relocation (Bendixson, 1977, p. 170).

10.33 Manufacturing investment incentives, as operated by the IDA, have proved to be a very successful regional policy instrument during the past decade in Ireland. The incentives available under the Service Industries Programme of the IDA are attracting almost 1,000 jobs annually from abroad, but a system of incentives will be required with the objective of persuading private sector offices to relocate from Dublin to one or more designated counter-magnet centres.¹⁸ Such an incentives package would also be available to *new* private office growth willing to set up outside Dublin in one of the counter-magnet cities.

10.34 The most fundamental form of regional discrimination occurs when the Government itself directly controls the enterprise whether it be a manufacturing unit, semi-State body, research institute or other office. With respect to new public enterprises or new sections of old ones the Government might learn from Italian experience, where public enterprises are obliged to locate at least 80% of their investment in the Mezzogiorno. All new public sector agencies and units should be located in the regions—preferably in a counter-magnet city if either Strategy B or C is adopted—providing there are no opportunity costs associated with such a location.

10.35 Although the major policy instruments to generate growth of employment and living standards in the Irish regions are likely to be the industrial and office development programmes, there is the opportunity to complement the strategies with one to influence *implicit* location decisions. There are regional employment multiplier effects associated with every decision to purchase goods and services, to invest funds in a project or to award a contract. It is quite possible that the vast sums of public and private money tied up in such actions flow in directions which are in conflict with regional objectives.¹⁹ There is an open system of tendering for public contracts which presents equal opportunities for

¹⁸See NESC, Report No. 28, pp. 133-135.

¹⁹At present, we have no knowledge of the size of regional multipliers in the Irish context.

firms in Designated Areas to compete for, and, if they are the most competitive, to win such contracts. It is common practice in some countries to give preference to poorer regions in bidding for Government contracts or in tendering for Government purchases. In Britain, under the contracts preference scheme, firms in the Development Areas are offered the chance of obtaining 25% of a Government contract if the lowest tender is from a Non-Development Area firm, provided that no additional cost is involved (Richardson, 1978, p. 247). In Ireland, public sector contracts should automatically be awarded to firms in DAs if their tenders are fully competitive with those from Non-DA firms.²⁰ It is likely that private organisations do not perceive opportunities to place contracts in Designated Areas, partly as a consequence of the concentration of decision-making in Dublin. A campaign should be launched to make private firms more aware not only of the importance of purchasing goods and services in Ireland but also of sourcing in Designated Areas²¹ whenever possible.

10.36 Regional and urban policy instruments must be evaluated within the overall framework of economic and social policies, as many non-spatial policies have regional impacts (e.g., welfare payments and agricultural price guarantees) and the objective should be to monitor not regional measures alone, but the net effect upon individual regions of all Government policies, both spatial and non-spatial.

10.37 One basic problem in implementing medium and long-term urban and regional strategies in a democracy is the probability of conflict between the policies which the professional regional planner and the politician might believe to be in the national interest: political

²⁰Kennedy and Foley, in the context of influencing the market conditions facing Irish suppliers in any region, have proposed a more direct and regular interaction between the purchaser (a public agency) and selected native firms that are judged capable of becoming fully viable in competitive markets in a given number of years (Kennedy and Foley, 1978, p. 111). The buying agency would use their purchasing power as a lever to develop these firms by, for example, laying down standards in relation to quality and design and providing technical advice to the firms to help them meet these standards. (Kennedy and Foley, 1978, p. 111).

²¹There is a need to review and re-define the extent and boundaries of the Designated Areas and this process is dependent upon the adoption of agreed criteria for defining them.

goals are, at best, of a 4- to 5-year time horizon, whereas regional development programmes are concerned with a 15- to 20- year time scale. Ireland's regional problems are primarily structural, and solutions to such problems are fundamentally long term (O'Farrell, 1972). The length of the time scale for urban and regional change is so long that for programmes to maintain continuity and effectiveness a degree of political consensus on the major goals and strategies is highly desirable.

10.38 This document has been written with the purpose of stimulating debate in Ireland concerning urban and regional policies. The probable consequences of continuing with current policies in terms of regional disparities in population and employment have been outlined. Many of the costs and benefits of two alternative Strategies, B and C, have been identified and Strategy C is preferred. Irrespective of which strategy is implemented (including a continuation of current policies under Strategy A) some difficult choices and trade offs will have to be made. If the community is serious in its commitment to regional policies, then Strategy C or some similar strategy involving a "redirection" of approximately 33,000 of the East region's projected population over the next eight years should be adopted. The question remains: what type of urban and regional distribution of population and sectoral employment opportunities does society desire over the next two decades? This report has attempted to highlight the relevant underlying trends and to outline a broad framework for consideration of strategy alternatives; it should not be regarded as a vehicle for implementing them.

Designated Area and Non-Designated Area Location Patterns: Major Findings

In analysing location patterns at DA/NDA level, a control for town size group is necessary. The results of the tests conducted at DA/NDA level are aggregated together in Table A2 and the most noteworthy general conclusion is that six of the eight independent variables are not related to DA/NDA location within any town size group. Hence, the size or sectoral orientation of new industry projects has not influenced DA/NDA location patterns. Similarly, the organisational classification of the establishment—for Irish and non-Irish projects—is independent of DA/NDA location; and furthermore, neither market orientation nor the fixed assets to labour ratio have influenced location decisions at the scale of DA and NDA. Plants of differing nationalities, with the exception of 29 establishments selling to the Irish market in towns of between 5,000 and 10,000 population, do not display any significant preferences for sites in DA or NDA.¹

The evidence which shows that capital grants as a percentage of fixed assets is quite strongly associated with DA/NDA location for plants in all town size groups (except 10,000-25,000) suggests that the differential grant system operated by the IDA and favouring DA has been the single most important factor influencing the pattern of location as between DA and NDA.

Town Size Group Location Patterns: Major Findings

There is a significant and not insubstantial relationship ($r_c=0.33$) between DA/NDA and town size group, and therefore a DA/NDA control is required when examining industrial location patterns by town size group. The results of the hypotheses tested at town size group level in both DA and NDA are summarised in Table A3 and show that there are more significant relationships within DA than within NDA. In the more prosperous NDA, manufacturing group is not independent of town size group and its association is a weak one: a knowledge of manufacturing group only reduces the proportional error in predicting town size location by 3.6%. It is somewhat unexpected that the cross classification analysis demonstrated that, within NDA, establishment size is unrelated to town size location and, furthermore, the location

¹These results are all summarised from O'Farrell P.N. (1978a).

APPENDIX

LOCATION PATTERNS OF NEW INDUSTRY PROJECTS 1960-1973

Regional Location Patterns: Major Findings

A control for town size group (less than or greater than 25,000 population) is required in order to test hypotheses concerning regional location patterns. The results of the complete set of hypotheses tested at regional level are summarised in Table A1 and this points to a number of general conclusions. First, there are four variables—establishment size, percentage of females employed, market orientation and fixed assets to labour ratio—which are not related to the regional location of plants in towns above or below 25,000 population (O'Farrell, 1978a). Second, for the plants in towns above 25,000 population (that is in regions, East, South-East, South-West, Mid-West and West), none of the independent variables tested is related to regional location. Third, manufacturing group, capital grants as a percentage of fixed assets, organisational type (non-Irish plants) and nationality (UK market orientation only) are all related to the regional location patterns of towns below 25,000. All four variables are only weakly associated with regional location—the strongest correlation being between manufacturing group and region where the analysis demonstrated that a knowledge of its sector only reduces the probability of error in predicting a plant's regional location by 5.9% (O'Farrell, 1978a). Fourth, despite the existence of these significant influences upon the regional distribution of plants in towns below 25,000, the relationships are not strong and suggest that, with respect to the factors tested, establishments display a relatively high degree of randomness in choosing a regional location.

pattern of large plants (above 100 employees) with respect to urban size does not differ from that of small ones. This result was substantiated by the statistically more powerful correlation analysis. There is a significant but weak ($r=0.22$) relationship between the logarithm of establishment size and log town size in DA: larger plants are more likely to locate in more populous urban centres; but only 5% of the variation in town size location is accounted for by plant size. Manufacturing group is more strongly associated with town size location in DA than in NDA: the major contributors are textile plants—under-represented in the 25,000-150,000 towns, industries producing food and drink—of which there are more than expected in towns below 1,500 and fewer in the 1,500-5,000 group, and engineering plants—which are under-represented in towns below 1,500 and over-represented in the 25,000-150,000 group.

Statistical testing also reveals that the IDA has not been varying its percentage grant payments by town size in NDA but, conversely, it has paid a disproportionately large number of projects over 50% grants in towns below 1,500 in DA. However, a more powerful correlation analysis—based upon survivors only—demonstrated that for this group of plants there is no relationship between percentage grants and town size in DA. Also, within DA, non-Irish branch plants, when compared with independents, reveal a marked preference for larger towns. Although four variables—percentage females employed, nationality, market orientation and fixed assets labour ratio—are unrelated to town size group location—all four significant relationships in DA are stronger than the only one (i.e., manufacturing group) in NDA.

Industrial Locational Patterns: Town Size and Regional Effects

The results reported in this Appendix have been obtained by analysing urban and regional location patterns separately within a hypothesis testing framework. It is of interest for policy reasons (i) to examine town size and regional location patterns simultaneously and (ii) to test whether locational differentiation is greater by town size or region in the Irish context.

The number of industrial establishments per town is cross-classified by town size group and region in Table 6 on the assumption that the samples are matched into eight regions and six size groups.

Examination of the columns in Table 6 shows that the North-East has an above average number of plants in each town size group, while the South-East is below average for all groups up to 25,000 population, as are the North-West and West for the three size groups below 10,000 population. However, the fundamental question posed by Table 6 is whether the probability of a plant locating within a specific town size group varies significantly by region or whether the inter-regional variations are simply the realisation of a stochastic process? Application of the Friedman Two-Way Analysis of Variance to test the null hypothesis that the column variable (region) has no effects indicates insignificance at the 0.05 and 0.01 levels specified. Hence, it may be concluded that the number of plants per town by town size group is independent of region.

Application of Two-Way Analysis of Variance (ANOVA) to the data in Table 6—although not totally justified statistically (due to between cell heterogeneity of variances)—does enable three hypotheses to be tested:

1. Column (Regional) Means equal
2. Row (Town Size Group) Means equal
3. Additivity in Population (No Interaction)

Each test is a test for the existence of a relationship between number of plants per town and one of the variables (e.g., region) controlling for the other (town size group). Such a controlling operation involves posing the hypothetical question of what the number of plants per town would be like if all towns were exposed to the same regional influence.

Assuming additivity in the model, the sums of squares due to interaction are thrown back into the error term to test hypotheses (1) and (2). The Two-Way ANOVA run on seven columns (West and Mid-West pooled) and the four town size groups below 25,000 population confirms that there is a highly significant town size group effect ($P<0.001$) (O'Farrell, 1978a). When the 10-25,000 town size group is eliminated the town-size group effect is also highly significant ($P<0.001$) (Table A4). There is little doubt that when we control for region by letting this factor explain all that it can of the variation in number of plants per town and then letting town size group explain

what it can of the remainder, there is a substantial relationship between town size group and number of plants per town. Hypothesis (2) may be rejected. Conversely, the F test for the between region effect (hypothesis 1), controlling for town size group, is not significant in both cases, which provides support for the Friedmann Two-Way ANOVA result showing an insignificant regional effect.

The relevant DA/NDA data is outlined in Table A5 and they reveal a somewhat unexpected pattern in that for every town size group there are more establishments per town in DA than NDA, even if the Shannon Industrial Estate plants are excluded. In order to test for the Between Areas and Between Town Size Group effects the assumption of additivity is tested and supported by an insignificant "F" statistic (Table A6). Application of Two-Way ANOVA to the towns below 25,000 demonstrates that, as in the case of the regional analysis, the Between Areas effect is not significant whereas the Between Town Size effect is highly significant ($P < 0.01$) (Table A6).

Hence, this analysis suggests that, even at the scale of DA/NDA, industrialists exercise a greater degree of locational differentiation by town size than by the two large regions.

TABLE A1
Regional New Industry Location Patterns 1960-1973: Summary of Statistical Results*

Independent Variable	Regional Location (<25,000 Towns)	Regional Location (>25,000 Towns)
Establishment Size	N.S.	N.S.
Manufacturing Group	$P < 0.01$ (n=0.059)	N.S.
Capital Grant as Percentage of fixed Assets	$P < 0.001$ (n=0.020)	N.S.
Percentage Females Employed	N.S.	N.S.
Organisational Type	Irish	$P < 0.002$ (n=0.052)
	Non-Irish	$P < 0.015$ (n=0.037)
Nationality	U.K. Market	N.S.
	European Market	N.S.
	Irish Market	N.S.
Market	U.K.	N.S.
	U.S.A.	N.S.
	German	N.S.
	Irish	N.S.
Orientation	Irish	N.S.
	Irish	N.S.
	Non-Irish	N.S.
Fixed Assets	Irish	N.S.
	Non-Irish	N.S.
Labour Ratio	Irish	N.S.
	Non-Irish	N.S.

*N.S. indicates not significant at the 5% level ($p < 0.05$).

¹ Goodman and Kruskal tau statistic.

Source: O'Farrell, P. N. (1978a), *An Analysis of New Industry Location: the Irish Case*, Progress in Planning, Pergamon Press, Oxford.

Source: O'Farrell, P. N. (1978a), *An Analysis of New Industry Location: the Irish Case*, Progress in Planning, Pergamon Press, Oxford.

Independent Variable	DA	NDA
Establishment Size	$r=0.22$ ($P<0.01$)	$r=0.106$ (N.S.)
Manufacturing Group	$P<0.001$ ($r_b=0.118$)	$P<0.02$ ($r_b=0.036$)
Capital Grant as a Percentage of Fixed Assets	$P<0.012$ ($r_b=0.108$)	N.S.
Percentage Females Employed	N.S.	N.S.
Organisational Type	Irish Non-Irish	N.S. N.S.
Nationality	U.K. Market European Market Irish Market	N.S. N.S. N.S.
Market Orientation	U.K. U.S.A. German Irish	N.S. N.S. N.S. N.S.
Fixed Assets	Irish Non-Irish	N.S. N.S.
Labour Ratio		N.S.

TABLE A3
Town Size Group New Industry Location Patterns 1960-1973: Summary of Statistical Results

Source: O'Farrell, P. N. (1978a), *An Analysis of New Industry Location: the Irish Case*, Progress in Planning, Pergamon Press, Oxford.

Establishment Size	DA/NDA Location			
	Town	Size	Group	Control
Less than 1,500	$P<0.001$ $r_c=-0.32$	$P<0.001$ $r_c=-0.38$	$P<0.001$ $r_c=-0.35$	$P<0.01$ $r=-0.497$
1,500-5,000	N.S.	N.S.	N.S.	N.S.
5,000-10,000	N.S.	N.S.	N.S.	N.S.
10,000-25,000	N.S.	N.S.	N.S.	N.S.
25,000-150,000	N.S.	N.S.	N.S.	N.S.

TABLE A2
Designated Area and Non-Designated Area New Industry Location Patterns 1960-1973: Summary of Statistical Results

Source: O'Farrell, P. N. (1978a), *An Analysis of New Industry Location: the Irish Case*, Progress in Planning, Pergamon Press, Oxford.
 *Figure based upon one town only.
 †Shannon Industrial Estate excluded (2.71 if included).

Town Size Group	Designated Area	Non-Designated Area	Mean
1500 <	0.406	0.164	0.28
1500-5000	2.03†	1.07	1.45
5000-10,000	2.50	2.18	2.36
10,000-25,000	6.33	3.57	4.40
>150,000	16.00*	12.00	13.00

Number of Grant-Aided Manufacturing Establishments per Town Classified by Town Size Group and by Designated Area/Non-Designated Area.

TABLE A5

Source: O'Farrell, P. N. (1978a), *An Analysis of New Industry Location: the Irish Case*, Progress in Planning, Pergamon Press, Oxford.
 †Results in parentheses are test with 10,000-25,000 towns eliminated.

Source of Variation	Sums of Squares	Degrees of Freedom	Mean Square	F	Significance Level
Total	127.04 (27.8)	27 (20)	4.71 (1.39)		
Between Regions	14.20 (4.8)	6 (6)	2.37 (0.80)	1.04 (1.57)	N.S. (N.S.)
Between Town Size Groups	71.71 (16.8)	3 (2)	23.90 (8.42)	10.47 (16.42)	P<0.001
Error	41.08 (6.2)	18 (12)	2.28 (0.51)		(P<0.001)
Non-Additivity	16.18 (2.18)	1 (1)	16.18 (2.18)	11.04 (6.05)	P<0.01 (N.S.)
Error Remainder	24.90 (3.97)	17 (11)	1.47 (0.36)		

Two Way Analysis of Variance of Number of Grant-Aided Manufacturing Establishments per Town Classified by Town Size Group and by Region.

TABLE A4

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